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Medical Society of Virginia
Richmond, October 18-20, 1948

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Rickets may exist in a subclinical form in as many as 46.5 percent of children between the ages of two and fourteen.[1]

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ADVANTAGE OF INDIRECT SKIN TESTS FOR YOUNG ALLERGIC CHILDREN*

W. Ambrose McGee, M.D.,
Richmond, Virginia.

The solution of a crime is dependent upon the thorough investigation of possible clues to ascertain the motive behind the affair and the one or ones guilty. Many of the clues which at first seem relevant are soon found worthless. Later, however, by persistent determination a few of the clues eventually lead to the guilty party.

A very similar situation exists when a recurrent or chronic disease or disorder is diagnosed as an allergic condition. In spite of a careful physical examination, various laboratory procedures and a painstaking history, it is generally necessary to have to rely on skin tests for additional clues. However, in the case of a child under one year of age such is usually not the case.

By slow introduction of single foods and vitamins and by allowing first a five-day interval, then a three-day interval to elapse after each new food or vitamin is ingested, it is possible to find clues or signals that reveal allergic tendencies. Certainly, when parents present a clinical history of present allergy or some past allergic disorders, such a routine plan will reduce to a very low minimum the need for skin tests in infants during their first year. It will also put us on our guard in watching recurrent disorders, such as head colds, abdominal pain, headaches, sneezing, persistent coughing, personality changes, skin rashes, etc. For when such recur, we then realize it is a "flare-up" of the allergic signals recognized early in infancy.

For children over one year of age, skin tests are usually needed, once an allergic diagnosis is made. For those under seven years, direct skin tests are not an easy procedure. Parents often wait until the child gets old enough to take the punishment of skin tests before resorting to them.

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 15, 1947.

It is unfortunate that almost all of those physicians devoting a large part of their efforts to allergy are internists and not pediatricians. They do not often see allergic disorders when the trouble is at a minimum, as with difficult feeders, and they do not have to treat medically the child having the allergy. In addition, many internists-allergists feel it will not often upset the child's morale if the skin tests are done by an expert technician, and when only a few needles are used at a visit. Be that as it may, such a prolonged procedure, when adequate food and inhalant tests are made, is hard on the child's morale for months and occasionally years afterward. Pediatricians have often remarked to me that the treatment (speaking of direct skin testing) is worse than the disease.

To offset the fear of an adequate skin testing, there is available a very useful method of performing all testing by proxy. About 15 c.c. of the allergic child's blood is obtained under sterile precautions. A small amount of the blood is put aside for any of the Wassermann-type of serology. The balance is first defibrinated by shaking in a sterile autoclaved glass beaded bottle for ten minutes. It is then centrifuged under sterile precautions to throw out the red cells. The supernatant red serum, if sterile, is put in a vaccine-type of vial, and it is ready for injection in a non-allergic individual. That serum is injected intracutaneously in a non-allergic adult in areas of .05 to 0.1 c.c. The injected areas are marked by ink circles. Antibodies are transferred by this procedure and will remain present at the site of injection for some four to six weeks. When a food or inhalant is to be tested, it is done in pairs—once in a circled area for the allergic child and once lateral to it as a control. After a lapse of fifteen minutes, the local reaction (consisting of a wheal or flare or both) is com-

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pared. If the reaction is larger in the circled area or of equal intensity in both areas, it is taken to represent a positive test for the allergic child. The more experience one has with this method, the better the results. Usually about twenty pair of tests can be done per visit. For the sake of simplicity, the non-allergic person who has the test performed on him or her is called a "human guinea pig".

The positive skin tests by the indirect or passive transfer method are interpreted like those from direct testing. Positive tests simply suggest potential offenders which might be past, present or future factors. The indirect positive tests are more apt to represent present offenders, as they are circulating antibodies which have been temporarily transferred to someone else's skin. Approximately ten per cent of allergic patients fail to have circulating antibodies. In that group positive information would not be obtainable.

Clinical significance of positive clues in the allergic patient's history and in the positive skin tests are revealed after reintroduction of forbidden foods some six or twelve months later. If he is still allergic to a food or foods, he will then have a continuation of his previous allergic symptoms or some new ones.

The indirect method of skin testing not only is extremely useful in young children, but is the method of choice in the following conditions:

For those who have abnormal skin conditions as eczema, dermographia or ichthyosis. Direct testing in this group is apt to give false skin tests.

For those who have recurrent urticaria or angioneurotic edema. This group might have a very severe or dangerous exacerbation of their allergic trouble. In addition, too many false positives occur.

For those who have constant asthma, as their skin often becomes refractory.

For economical reasons, as when no nearby physician majors in allergy. Here a railroad trip and hotel bill will prove most expensive.

For those who have needle-phobia, indirect skin testing makes it possible for any allergic patient, anywhere, whether young or old, to have the advantage of a thorough allergic study. The summary of the history, physical examination, laboratory findings and the mailing of the prepared serum to an allergist of his choice are all that are needed. The findings and written suggestions are then forwarded to the patient's physician for his approval.

As a pediatrician who has seen the emotional upsets from direct skin testing, the indirect method is certainly the one of choice for little children.

1001 West Franklin Street.

DISCUSSION

DR. LETA J. WHITE, Petersburg: The problem presented by Dr. McGee is certainly one of the most trying, both to the doctor and to the mother.

There are two types of cases which bother us most. One is the child whose allergy is manifested by an eczema, causing great distress because of constant itching. In one such case which I had, the mother could not stand seeing her child covered with a rash and in what to her was a horrible condition. She became so depressed that she had to be hospitalized. The other type is the child who has no rash and grows and gains steadily, but cries day and night because of colicky pains in his intestinal tract, these pains being caused by various foods to which he is allergic. There are, of course, other types of allergic manifestations but these two are the most troublesome.

In my opinion, indirect skin testing is by far the best method to use in determining the cause of allergic symptoms in children.

From the standpoint of the child, he is already upset from crying day and night or being in constant discomfort from itching. To test him directly would increase his irritability and the results would be unsatisfactory because of the problem of holding him still enough to make the tests properly.

From the standpoint of the mother, who is already worn out, it is far more satisfactory to take her baby for one visit to the doctor, when the blood is taken. Then, without being further harassed by a miserable baby or trying to determine the causative factor by an elimination diet, she may find out the possible causes of all her trouble. It is undoubtedly true that many of these problems can be corrected by following the plan of an elimination diet, thus locating the causative factors. An elimination diet plan sounds simple to us, but extremely complicated to many mothers. One mother to whom I had tried repeatedly to explain it, replied in great disgust, "Yes, I know, you told me that before."

I have had many patients tested by the indirect method and have, without exception, had satisfactory results. I have never had a family who was not grateful for the help received, and not one complained of the additional cost.

In my experience, at the present time, we know of no method which is better than indirect skin testing for giving these children and their mothers the help and relief they need.

GOUT SIMULATING RHEUMATOID ARTHRITIS*

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and
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Newport News, Virginia.

In 1938 Ludwig, Bennett, and Bauer[1] reported a case of gout with widespread ankylosis closely simulating a severe case of rheumatoid arthritis. Their extensive review of the literature revealed that few such cases had been reported and most of these in the latter half of the nineteenth century. Comroe[2] stated that ankylosis in gout is extremely rare and usually limited to one or two joints. In Talbott's[3] large series there were two cases of gout severe enough to confine the patients to bed as permanent cripples.

It seemed worthwhile, therefore, to report a case of gout with widespread ankylosis and with many features of rheumatoid arthritis. Morever, the subsequent course of this patient suggests that, had the diagnosis of gout been made and appropriate treatment instituted, much of the present disability could have been prevented.

CASE REPORT

A. B., a white, male, 36 year old farmer, was admitted to the hospital on October 1, 1946, with a diagnosis of rheumatoid arthritis. He had been bedridden for 3½ years and was referred by the Farm Security Administration, through whom his family were purchasing their farm.

Family History: Two paternal uncles had severe rheumatism, type undetermined. His father, aged 60, alive and well, but in the past had suffered from kidney colic.

Past History: The patient's early life had been quite healthy and he was accustomed to heavy farm work. His only illness was some bronchial trouble fifteen years ago which kept him in bed about one month. He has had no major injuries. Before being crippled he drank moderate quantities of beer but no whisky. His weight was 165 pounds at the beginning of his illness. His diet was the usual one for farmers of moderate means in his district.

Present Illness: In the fall of 1934 the patient, then 24 years of age, was awakened about two o'clock in the morning with severe pain in the right great toe. The toe became red, warm, and swollen, but began to subside in 3 days. In two weeks he was back at hard work and had no more difficulty for one year. During the next 2 years there were two more attacks involving the right great toe exactly similar to the first. Three years after this onset the right ankle became red and swollen, subsided, and then the right knee was similarly involved a few months later. Four years after the onset the

I. Patient on admission when he had to be supported by orderly. The muscular wasting and fixed joints present the classical picture of rheumatoid arthritis.

wrists, hands, and right elbow, became involved. This was followed by the left ankle, left knee, and left foot, in that order. After the fourth year attacks became much more frequent and widespread and joints affected did not completely return to normal. However, between acute episodes, which lasted one to two weeks, he was up and about doing hard farm work including plowing. About 3½ years before admission he suffered an unusually se-

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 13-15, 1947.

†From the Medical and Surgical Services of Elizabeth Buxton Hospital, Newport News, Virginia.

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vere attack involving all four extremities and has been confined to bed since. During these last years he continued to have acute attacks of red, hot, swollen joints which would subside in one to two weeks.

This history is certainly typical of gout. The bunion joint was involved three times before other joints were affected. But most important, the patient for many years was able to return to hard farm labor between numerous attacks of acute arthritis.

Physical Examination: The patient did not appear acutely ill but was crippled to the extent that he could turn over in bed only with the greatest difficulty. The face appeared bloated and there was an erythematous, scaly eruption on both cheeks. The tonsils had been removed six years previously because of rheumatism. The teeth were in excellent condition. There were lesions resembling tophi on the helix of both ears. The chest was emphysematous and on auscultation revealed a few coarse bronchial rales at both bases. The heart appeared normal. The blood pressure was 140/100. The abdomen was protuberant but was non-tender and no masses were felt. The prostate gland was normal in size and consistency and non-tender. The deep reflexes were difficult to elicit due to the condition of the joints. The changes in the extremities were striking. The right elbow was practically fixed in mid flexion. There was a large nodular firm mass in the region of the right olecranon bursa. The wrists were capable of only a few degrees of flexion. The metacarpo-phalangeal joints were greatly enlarged, ankylosed, and showed partial subluxation. The fingers were slender and tapering and stiff but not ankylosed. The skin of the hands was shiny, cold, and clammy. The muscles of the forearms showed marked wasting. The knee and ankle joints were greatly enlarged but no fluid could be demonstrated. The left knee could be manipulated to only 30° of full extension, the right to 10°. The right ankle had slight motion in dorsiflexion but no lateral motion. The left ankle was completely frozen. The first metatarso-phalangeal joints of both feet were greatly enlarged. The skin of the feet, like the hands, was shiny, smooth, cold, and clammy. There were marked vasomotor color changes. Atrophy of the muscles of the upper and lower leg was pronounced.

II. The gouty olecranon bursa is not very well shown here. The absence of involvement in proximal interphalangeal joints can be seen.

III. The foot is at the limit of dorsiflexion and the knee of extension. A suggestion of the marked color changes in the foot can be seen.

The enlarged thickened joints, with their size accentuated by the atrophy of the adjacent muscles, and the cold clammy extremities with atrophic skin changes, presented the classical picture of rheumatoid arthritis. In fact, the examiner, having not taken a careful early history, had entertained no other diagnosis until the large nodular mass over the right olecranon bursa literally hit him in the eye. White chalky material from this bursa and from a small tophus on the helix of the right ear (immediately found on backward search) revealed numerous typical crystals of sodium biurate.

Laboratory Data: The blood uric acid was 6.6 mgs. % on admission. This was done on whole blood and by this method anything above 4 mgs. % is definitely abnormal. Subsequently uric acid

values ranged from 8.4 mgs. % to a low of 3.5 mgs. % two months after he was first seen. Hgb. 103%. Rbc. 5,510,000. Wbc. 12,700. Differential normal. Urine showed an occasional slight trace of albumin. Blood Kahn was negative. Sedimentation rate 25 mm. per hour (Cutler). Cholesterol 180 mgs. %. BMR plus 2.

X-ray examination of the joints involved showed extensive changes. There was generalized osteoporosis of the bones of the hands. The interphalangeal joints were not extensively affected. The third metacarpal phalangeal joint of the right hand was completely destroyed and there was subluxation at this joint. There was extensive destruction of cartilage and narrowing of joint spaces of the small bones of the hands and the wrist joint. There was complete obliteration of the right elbow joint with marginal erosion of the olecranon process of the ulna. There was extensive joint destruction involving both ankles and the small bones of the feet. The tarso-metatarsal joints were practically obliterated. Both bunion joints were grossly affected and to a lesser extent the phalangeal joints of the great toes. In this situation there were numerous punched out areas. Over the right bunion joint there was a subcutaneous tophus. Both knees showed osteoporosis, narrowing of the joint spaces, and suggestive punched out areas in the subchondral bone.

IV. X-rays of the feet show the characteristic picture of gout with numerous punched out areas. There is a subcutaneous tophus overlying the right bunion joint.

V. X-ray of the right hand shows definite osteoporosis and obliteration of joint spaces between the carpal bones. There is subluxation of the 3rd metacarpophalangeal joint. This picture is superficially much like rheumatoid arthritis.

The x-ray changes in gout have been recently summarized by Rosenberg and Arens.[4] They note that osteoporosis and destruction of cartilage may at times be the only changes present and that osteoporosis develops quickly in those cases in which the joints are immobilized. Roentgenograms may then closely simulate rheumotoid arthritis. In the case reported here this is quite striking except for the views of the bunion joints, which are typical of gout. A careful history and determination of blood uric acid, especially on serum, are much more important as diagnostic aids than x-ray.

A biopsy was taken from the right olecranon bursa when it was surgically removed at his original admission. The bursa contained a large amount of amorphus material which on examination proved to be crystals of sodium biurate and cholesterol. Sections of the lining membrane showed many typical gouty tubercles. The peripheral zone is made up of urate crystals while the central portion is cholesterol. This has been shown by analysis of nodules by Garrec, Cornil and Paillas.[5] The crystals act as a foreign body and invoke an inflammatory reaction wherever they are present. The synovial membrane, joint capsule, articular cartilage,

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VI. Section of Olecranon Bursa.—The gouty tubercles surrounded by inflammatory reaction are well shown. The outer ring of urate crystals and inner zone of cholesterol can be seen in several.

subchondral bone, marrow, bursa, ligaments and tendons may be involved in any combination.[6]

One year after his original admission a biopsy was taken from the synovial membrane of the left knee joint. Examination of this tissue showed no significant changes from the normal.

Treatment and Subsequent Course: The patient was placed on a low fat, moderately low purine diet, and fluids were forced. Colchicine was given to toxicity and he was then maintained on 1/120 gr. four times a day for 3 days out of each week. Sodium salicylate 80 to 120 grs. was given the remaining four days of the week. Physiotherapy, in the form of heat, passive and active motion of the joints, muscle retraining, and contrast baths, was used vigorously. The necessary surgical and orthopedic measures were carried out. He was discharged with instructions as to medication and home physiotherapy. During the ensuing year he had two attacks of acute arthrits, one involving the right elbow, the other the right knee and left ankle. Improvement has been progressive. He is now able to walk about the house without crutches and drives an automobile. The leg muscles are developing and the circulatory changes in the feet have disappeared. There is now complete range of motion in the right knee and less than 10° impairment of full extension in the left knee. Motion of the right ankle joint is now 50% of normal, but the left remains ankylosed. Improvement in the hands and wrists is less marked but he can now make a fist with both hands. The right elbow is unchanged.

DISCUSSION

There have been a few reports of gout and rheumatoid arthritis in the same individual. The evidence does not seem convincing. In the present case the history of severe recurring joint involvement with complete remission for many years is much against rheumatoid arthritis. The proximal interphalangeal joints have been spared. During a recent attack with a hot swollen right knee and left ankle there was a complete remission to the original state with full doses of colchicine. The negative biopsy of the synovia of the left knee is of course no proof either way; however, gout is known to affect any part of the joint structure indiscriminately—cartilage, capsule, ligaments and tendons, as well as synovia—while rheumatoid arthritis primarily attacks the synovial membrane.

It seemed to the authors that the marked improvement which this patient has shown over the

last year has been due to control of pain, allowing ambulation. Surgical measures combined with intensive physiotherapy were initially necessary to correct the contractures of the knees and feet. Once up, he has been kept out of bed by the liberal use of colchicine during acute episodes. The danger of prolonged immobilization in gout was clearly seen by Sydenham[7] in the middle of the 17th century. He states in part "But the principal advantage resulting from the constant use of exercise is the preventing the loss of motion in the limbs, which seizes several persons after the first or second long fit, occasioned by the contraction of the tendons of the hams and heels; for when the pain has been so violent that they have lain still a long time, not caring to stretch out their legs when it has attacked the knees, they at length lose the use of their legs and feet for the remainder of life, both during the intervals, and in the fits, which nevertheless they do not escape."

In conclusion, a case of gout is presented with multiple, severe joint involvement and many features of rheumatoid arthritis. Such cases appear to be rare and occur mainly in the younger age group. Extensive crippling deformities may be prevented in such cases by the judicious use of colchicine which will permit early ambulation and prevent the secondary effects of disuse.

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DISCUSSION

DR. RUSSELL BUXTON, Newport News: It has given me a great deal of pleasure to have had the opportunity of working with Dr. Read on this case, and I think he is to be congratulated not only for the good result that he has obtained in a very poor type of case to start with but also for his excellent presentation and for his persistence in working on this case.

In discussing the surgical treatment of gout it is needless to point out that surgery plays no part in the management of acute gout. In the handling of chronic cases of gout, however, surgical intervention can and should be used, as this particular case demonstrates.

First, any bursa that is uncomfortable and has become enlarged, or that has become filled with uric-acid crystals, should be removed for the relief of discomfort and to prevent ulceration. In this case the olecranon bursa was totally excised and two joint spaces were explored, without any evidence of infection. I was amazed, though, that the skin healed at all, for it was practically as thin as tissue paper at the time of removal. The absence of infection was undoubtedly due to the use of penicillin, as persons with gout ordinarily are easily infected. The possibility of severe infection always worries the surgeon in a case of gout. Also, the man did not have a flare-up of his disease following two surgical procedures, and this was due to the use of colchicine before and after operation.

The only additional surgical measures which are applicable to the treatment of chronic gout are those reparative measures which are useful in any type of chronic joint disease. In this case, at the suggestion of an orthopedic consultant, the wrists and hands were straightened under anesthesia and light plaster splints were applied. These were removed for physiotherapy as soon after the operation as the patient was comfortable. In addition, a well-padded heavy cast was applied from mid thigh to toes and split at the knee. An adjustable metal hinge was incorporated in the cast, so that the leg could gradually be extended. This has resulted in a partially functioning knee, so that this patient can now use crutches, whereas previously he was practically bedridden.

To sum up, this case shows that, if properly handled, patients with gout can be operated upon with little danger of flare-ups or infection and that proper orthopedic treatment, in conjunction with a carefully planned regime, can restore hopelessly crippled patients to a more nearly normal life.

XUM

RED CROSS BLOOD PROGRAM*

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Rear Admiral, M.C., U.S.N. (Ret.),
Alexandria, Virginia.
Deputy Administrator, National Blood Program, American Red Cross

I feel doubly honored in being a guest of the Alexandria Medical Society—first, because Dr. Mourot suggested it, and, secondly, for several years, I was permitted a membership here.

Like a prodigal son, I have wandered over distant lands for over thirty years; now I have come home hoping to serve the community and the medical profession in accordance with the philosophy of the American Red Cross.

Our philosophy, naturally, is based on the Congressional Charter of the American National Red Cross, which charges us with:

a. Furnishing volunteer aid to sick and wounded in time of war.
b. Conforming to the international agreements of the Geneva Treaty.
c. Acting in matters of voluntary relief and in accord with the Military and Naval authorities as a medium of communication between the people of the U. S. A. and their Armed Services.
d. Continuing and carrying on a system of national and international relief in time of peace and applying the same in mitigating the sufferings caused by pestilence, famine, fire, floods and other great national calamities, and devising and carrying on measures for preventing the same.

It is the latter, the giving of oneself, one's time, of one's effort in any way possible to relieve and prevent suffering which makes for a sound democratic philosophy—a service of the people, by the people and for the people.

There is no theology on which all men agree—any more than there is one international flag to which all men will pledge their allegiance; but there is one ideal that is common to all men of good will—humanitarianism—and that ideal is represented in the one banner under which all men may serve without doing violence to their patriotism or their loyalties—national, religious, racial—the banner of the Red Cross, which symbolizes good will, humanity, respect of all who behold it wherever it flies.

It was this philosophy which promoted the Board of Governors to accept the challenge of a National Blood Program which will furnish a continuous supply of blood, sufficient in quantity to meet the hazards of peace and provide for the impact of national emergencies.

The program was first announced on June 12, 1947, by the Board of Governors and the kick-off occurred on January 12, 1948, at Rochester, New York, when our first regional blood center was established. The ball was picked up at Wichita, Kansas, on the 16th, carried further by Stockton, California, on February 2nd, and a first down was made at Atlanta, Georgia, on the 17th of February.

We hope to establish some fifty centers and their supporting mobile units during the fiscal year of 1948-49, but it will take from 3 to 5 years to reach our goal of several hundred centers supported by six to eight hundred mobile units.

The nation-wide series of regional centers will be strategically located with the view to the most effective procurement and distribution of blood to meet national needs on the community levels.

Experience tables indicate that we need five pints of blood per general hospital bed per year plus one pint per tuberculosis and neuropsychiatric bed per year. In accordance with these criteria the national need is approximately 3,700,000 pints of blood per annum,—3 million for civilian, and 700,000 pints for the Veterans, military and other governmental hospitals.

In order to better understand why the Red Cross has undertaken this program, one needs to review the history of our previous participation in this field of activity.

Back in the middle 1930's, a young physician in Georgia became greatly concerned over the high death rate from hemorrhage among mothers following childbirth. He knew that whole blood for immediate transfusion was the best possible treatment, but where to get enough blood to supply the needs of the community was a serious problem. Then he

*Read before the Alexandria Medical Society, March 11, 1948.

thought of his local Red Cross chapter. Could the chapter do anything to help him—and the scores of expectant mothers whose lives might be in jeopardy? The chapter could and did do something. It began to recruit voluntary donors to supply blood, without charge for the product, to the doctors and hospitals in the city of Augusta, Georgia.

A gradual and progressive establishment of blood donor programs was well under way shortly before the beginning of the recent war. The history of the Red Cross participation throughout the war is well known to you—you participated in it. However, I should like to re-emphasize the fact that it was a cooperative venture shared by the armed forces, the Red Cross and the medical profession, guided by the National Research Council. Its purpose was to supply the military forces, initially plasma, then serum albumin, and, finally, whole blood. With the cessation of hostilities in Europe several of our blood donor centers were closed, and shortly after the surrender of Japan, the rest were discontinued.

Through shipments to the far reaches of the world, our wartime program saved thousands of lives and speeded the healing of other thousands who suffered injuries.

Now we are faced with a proposition equally significant for the American people. Can that same fine record of life-saving and healing be duplicated for all our people in time of peace?

We say it can.

We have good reason for confidence because of the successes achieved by a number of chapters which, at the close of the war, took advantage of the permissive policy approved by the central committee of the Red Cross for chapters to cooperate in local programs to serve their communities and states. However, it was soon evident that development through the initiative of individual states and communities would be slow, and that, further, the supplies of surplus wartime plasma and immune serum globulin that had been made available to the people of the nation by the American Red Cross would soon be exhausted. Accordingly, in response to a growing demand from the medical profession and laymen alike, the American Red Cross announced on June 12, 1947, the inauguration of a National Blood Program—"to provide blood and blood derivatives, without charge for the products, to all those who might need them".

The decision was not reached without carefully weighing the great need for blood and the ability of the Red Cross to obtain sufficient voluntary donors and to finance a project of this size and importance.

We had the good fortune to be counseled by the leading medical and health authorities of the nation, who have recommended that the Red Cross undertake this far-reaching service.

It was they, in large part, who demonstrated the need we are now asked to meet. Research in blood, developed during and since World War II, has led the medical profession to discover an increasing number of uses both for whole blood and for the blood fractions that are among the most significant new advances in modern medical practice.

Let's pause here and review some of the uses of each.

I have mentioned the dramatic results attained on the battle-field by the use of whole blood and plasma. Whether ministered to in a foxhole, an aid station, or in a hospital, you, your loved ones were given an added chance for life not possible in the wars of the past. This life-sparing fluid contributed much to the brilliant record military medicine achieved on the field of battle.

But—we are now at peace. How can that war record be applied to everyday life?

The Cocoanut Grove fire in Boston, the Wyncoff fire in Atlanta, Georgia; the Texas City disaster, and the Florida hurricane are still fresh in the memories of many at this luncheon. Shock, burns, hemorrhage, wherever, whenever and however produced, call for blood, plasma or serum albumin immediately and in sufficient quantities to tide the patient through until his own defenses can be mobilized.

Modern life with the constant hazards from our rapid means of transportation, yours and my child run down by an automobile, Bill Jones and his wife in an airplane crackup, a factory fire, an explosion in one of our new atomic research laboratories, a hurricane, or even a fall in the bathtub may be responsible for shock or hemorrhage.

But the need is not limited to traumatic surgery. Blood is now used as supportive treatment before, during and after surgery. I mentioned the hemorrhages of childbirth— they cover the anemias, the severe infections, the hypoproteinemias of disease and starvation.

We could go on for hours in discussing whole blood, but we must not forget the blood derivatives or fractions.

XUM

Like many of you, I, too, asked the question as to what is a fraction and, with your permission, I should like to review a little of the lessons learned from research.

As I previously mentioned, the wartime program was a co-operative project between the armed forces, the Red Cross and the medical profession under the guidance of the National Research Council. This group initially made plasma available for the armed forces so that even at Pearl Harbor, every ship, aid station and hospital had a stock on hand. This product is the liquid part of blood—dried for preservation and available for reconstitution when needed. The solid part of blood is primarily composed of cells, principally the red cells, and constitutes about 45% of the volume—the plasma about 55%.

About 7% of the plasma is a protein—in which are found many important elements.

Our Research Council, together with the Office of Scientific Research and Development, began an immediate investigation of whole blood, plasma and the solid parts. The whole blood, for which there is no substitute, was most important to military medicine, but—unless the red cells could be kept alive to perform their vital part—its use was limited. In Massachusetts, at Harvard, under Doctors Cohn, Janeway, Diamond, John Gibson and others, many of the brilliant scientific advances were made. Here we were able to determine the life of the red cell and study the new preservatives. The life of the red cell in man is from 80 to 120 days, but, when war broke, we could only preserve it in our blood banks for several days—too short a period for anything but local use. But the battle-front was thousands of miles away. In brief, new preservatives were developed and one—our present sod. citrate, citric acid, dextrose (ACD) solution—was found to expand the life of the cell in storage for from 21 to 30 days. This was determined by the employment of nuclear research. Iron in the forms used for the treatment of anemia has an affinity for young developing red cells. So, Dr. Gibson and others made iron—iron ammonium citrate radio active. Volunteer donors were given this radioactive material either by mouth or injection, and, in turn, this radioactive iron attached itself to (tagged) the new young red cells of the donor. After sufficient cells were tagged as determined by a Geiger counter, blood was withdrawn from the donor into a regular donor set. It was then placed in the prospective pipe-line of supplies under the proposed conditions found necessary and flown via Washington, San Francisco, Hawaii, to Guam—and then returned in the same way to Boston. Here the blood was injected into recipients and again studied. Thus we learned that 85 to 90% of red cells, when stored in ACD under proper conditions will survive. Now we were ready to fly blood to the four corners of the earth and be assured that the battle casualties were getting living red cells in the transfused blood.

During the early phases of the battle of the Pacific shipping space was critical. Plasma took up room needed for munitions of war. How could we conserve space? Again the Harvard Group—this time under Dr. Cohn—put its scientific knowledge behind the problem. Plasma was studied to determine how it may be broken down into component parts, knowing that—if practical means could be developed—serum albumin could be substituted for plasma for the treatment of shock and that it was 5 times as efficacious in maintaining the fluid balance in the blood vessels as was plasma. By an ingenious method, this group developed means of breaking down the protein of plasma into five primary parts—fractions. Special studies showed that the plasma protein is composed of some 60 recognized component parts—found distributed in these 5 fractions. This breakdown, or fractionation, though requiring great skill, can be described in somewhat simple terms. There are five variables used, namely: temperature, alcohol concentration, salt concentration, degree of acidity or alkalinity, and the concentration of the proteins in the solution. With a certain set of these variables, a flocculent material separates from the liquid and when separated constitutes a fraction—let's call it fraction I. The remaining fluid is subjected to another set of variables with a second separation of a flocculent material. This constitutes fraction II. The process is repeated and we are able to get five fundamental fractions—each of which has properties peculiar to itself. From one of these fractions comes fibrin—important in blood clotting; from another the immune serum globulin we use in the modification and treatment of measles. From fraction five we get the serum albumin—a protein considered more effective in shock than an equal quantity of plasma.

The day by day prevention of death and relief

of suffering in cases of accident and disease, as well as gearing ourselves to meet disaster, is our mission.

To accomplish this, Dr. Ross T. McIntire, wartime Surgeon General of the Navy, was selected as the administrator. He has unique qualifications for the task because not only did he gear the peacetime Naval medical service to its war tasks, but he was intimately associated with the war time blood program.

The immediate direction and supervision of the blood program in the chapters and the regional blood centers and their mobile units rest in the area offices; the general over-all direction and supervision in national headquarters.

To insure the maintenance of uniform technical standards in so important a program, those standards and professional techniques are set by the Committee on Blood and Blood Derivatives of our advisory board on Health Services. Further, all technical and professional personnel are paid by the national organization.

At a community level, a blood center is set up by a chapter in a large city. From this fixed center, mobile units visit outlying chapters which provide facilities for the procurement of blood in their communities and are known as cooperating chapters.

A blood center is established only after thorough investigation has shown that: (a) there is need for blood; (b) facilities for supporting the program are adequate, and (c) the principles and policies of the program are approved by the *local medical society*, the *health department* and the hospital organization.

When the above criteria have been fulfilled, and the attitude of fixed and cooperating chapters is satisfactory, steps are taken to place the center in actual operation.

First is the appointment of the Blood Program Committee composed of key personnel from the various chapter services and representatives of the medical society, health department, and the hospitals. In addition to this committee for the fixed center, each of the cooperating chapters develops a similar Blood Program Committee for mobile units.

Then comes the Coordinating Committee, composed of one member from each of the Blood Program Committees of all the chapters participating in the program. This committee maintains liaison with the fixed center Blood Program Committee through its member from the fixed center chapter.

Next is the Medical Advisory Committee for the fixed center chapter and the cooperating chapters. In each instance the committee will be composed of medical men recommended by the local medical society. The chairman of the committee will serve as a member of the chapter's Blood Program Committee. This committee will survey the hospitals to be served and will assist the Blood Program Committee in arranging for their participation. Further, in the fixed center chapter, the committee will recommend the physician in charge (technical director) and after his appointment will advise him on the technical operation of the center, subject to the technical standards and procedures prescribed by the national organization.

Other committees that will work closely with the Blood Program Committee are those on Volunteer Services and Public Information. There will be a Donor Recruitment Subcommittee of the Blood Program Committee.

Having organized the committees, acquired and prepared the suitable space for the center, selected and trained the personnel, and procured supplies and equipment, the chapter and the national organization are ready to begin operations.

The local committee of practicing physicians will thus have constant supervisory control of the activities of the local Red Cross blood program, including the distribution of blood to the hospitals.

I should like to repeat—it is not our plan to interfere with existing blood bank facilities, whether these are of the private, non-profit variety or of individual hospitals. Rather, it will supplement these facilities and support them on request.

As for the Red Cross policy of distributing blood and blood derivatives without charge for the product, this in no way interferes with the current policy of physicians and hospitals making a service charge for administering blood, such charge to cover the check typing of the donor's blood and the recipient's blood, the cross-matching, the equipment for the recipient, etc.

And to you physicians, our technical staff has emphasized the philosophy of the bottle of blood —to wit:

It is absolutely essential that all persons associated with the blood program, from the blood custodian to the technical director, have the attitude

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that each blood donation must be so handled that it would be completely acceptable for the transfusion to be given to the individual himself or herself. In other words, the donor should be selected with the greatest care, and every regulation both for his protection and that of the blood should be rigidly followed. Blood should be so stored and handled that minimum deterioration will occur. Finally, all precautions should be taken before injecting it into the recipient so that only benefit and absolutely no harm can result.

If this is kept in mind every time a donor is seen and a donation is obtained, each bottle of blood can be declared fit for personal use and "guaranteed" to be the best therapeutic agent obtainable for those specific indications for which it must be used.

I have thus reviewed the philosophy, the purposes and our method of implementing your National Blood Program—designed to make available to the patient, through you, one of the most important medicaments known to man.

44 Woodmont Road (Belle Haven).

Schering Announces New Research Grants.

Five new research studies in the field of hormone therapy, x-ray diagnostics and allergy, instituted under grants from Schering Corporation, of Bloomfield, N. J., have been announced. These grants in support of studies at four Eastern and one Western medical institutions are a part of the expanding program of Schering's research.

An unusual study on encephalography in allergic children, and the effect in this condition of Trimeton, Schering's new antihistaminic, will be pursued at the New York Post-Graduate Hospital. The research will be under the direction of Dr. Robert Chobot, attending physician in allergy.

Companion studies on the utilization and absorption of the female sex hormones, progesterone, estradiol and estradiol benzoate, by routes other than injection will be studied at Cornell University Medical College and New York Medical College. Progesterone, the hormone of pregnancy, will be studied at Cornell under the direction of Dr. Ephraim Shorr, associate professor of medicine. Dr. Thomas H. McGavack, professor of clinical medicine and director of the Metropolitan Hospital Research Unit, will supervise the studies on estradiol and estradiol benzoate at New York Medical College.

At Yale University's School of Medicine, New Haven, Connecticut, the metabolism, absorption and excretion of the gall bladder diagnostic agent, Priodax, and of related compounds will be studied under the direction of Dr. William T. Salter, professor of pharmacology.

Dr. Robert H. Williams, professor of medicine and chairman of the department of medicine at the University of Washington School of Medicine, Seattle, will supervise studies on the effect of the male hormone preparations of testosterone in thyrotoxicosis, Addison's disease and Cushing's disease.

FOREIGN BODIES IN THE GASTRO-INTESTINAL TRACT*

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Foreign bodies in the gastro-intestinal tract of children are far from unusual. It is well known that children often swallow small objects which they are prone to put in their mouths. Almost any conceivable object of appropriate size has been swallowed by children. Common offenders are buttons, nails, straight pins, safety pins both open and closed, tacks, marbles, coins up to the size of a quarter, beads, rings, bobby pins, keys, nuts, bolts and screws. The great majority pass through the alimentary canal with no symptoms.

The recent occurrence of two cases, almost identical in nature, in which a bobby pin was swallowed, and in which surgical removal was necessary, has prompted a review of the literature on this matter. The discussion here is limited to foreign bodies which reach the stomach; above this level the problem is entirely one for the endoscopist.

The largest series of cases has been reported by Ladd and Gross of The Children's Hospital, in Boston. They report a series of 337 cases. The most common age incidence is from six months to four years. In this large series, operation was necessary in only fourteen of the patients, the remainder passing the foreign body in the stool.

In general, conservative treatment is all that is required. This is particularly true of objects which are not sharp or pointed and in which there is little likelihood of damage to the gastro-intestinal tract. Most of the foreign bodies which are swallowed by children are opaque to x-ray, and these examinations are of value in locating the foreign body exactly. They are also of value in following the progress through the gastro-intestinal canal. Usually a flat plate or fluoroscopic examination is satisfactory.

Conservative treatment consists only of continuing the child's normal diet. Active catharsis should be avoided. It is felt that this may contribute to the possibility of perforation by increasing peristalsis. A diet consisting chiefly of bread and potatoes is of no value. Mineral oil should be used to combat constipation. The age of the child should not of itself be considered any indication for abandoning conservative treatment, as the size of the child apparently has very little to do with the size of a foreign body which can be passed. It is interesting that cases have been reported of a bobby pin passing spontaneously in one child aged four months and in another aged six months. Passage of safety pins, both open and closed, have been reported in children under one year of age. The stools of the child should be carefully watched.

Conservative treatment should not be abandoned unless a sharp and potentially dangerous foreign body becomes lodged in one place for more than three or four days. However, each case must be judged individually and carefully watched for signs of perforation if the foreign body is sharp. In the series of fourteen operated cases mentioned by Ladd and Gross, lodgment of the foreign body occurred in the stomach or duodenum in all but one. All objects which passed this level were ultimately passed in the stool without difficulty, with the exception of one child in whom there was a stenosis of the jejunum. In the report of Donovan there are two cases in which perforation of a Meckel's diverticulum by a foreign body occurred.

Surgical removal is recommended if conservative treatment fails. Gastroscopy is generally considered to be a more hazardous procedure in a child than is surgical removal.

A few recent cases have been reported in which metalec foreign bodies have been removed from the stomach by means of a magnet. Report of a nail removed from the duodenum was recently published by Equen, *et al.* In this case a small magnet tied to a string was swallowed, allowed to attach itself to the nail and this was then removed without difficulty. More complete reports on this type of removal have been written by Silber and Epstein, who concluded that the simple passing of a magnet attached to a string is not without hazard. There is danger that the foreign body will become detached from the magnet and become lodged in a more inaccessible place than was at first the case. Pas-

*Read before the annual meeting of the Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, December 2-4, 1947.

sage into the trachea and bronchi is possible. Silber and Epstein recommend that a magnet be used which can be withdrawn into a sheath, and which will thus protect the foreign body in its removal. They reported two cases in which a bobby pin and a paper clip were removed from the stomach in this manner. This method seems promising and possibly will become the method of choice in the future.

The following two cases are reported in summary and indicate the relative simplicity of the operative treatment.

Case 1: L. W., white girl, aged two years. This child had swallowed a bobby pin eight days before operation. X-rays had been taken every forty-eight hours and there had been no change in position. The pin was lodged in the lower portion of the stomach. The abdomen was opened through a small left rectus incision; an opening was made on the anterior wall of the stomach, the pin was located and easily removed. Post-operative care consisted of fluids which were given both subcutaneously and by rectum. A small catheter was placed in the stomach through the nose and was allowed to drain without suction for twenty-four hours. The child made an entirely uneventful convalescence and was discharged from the hospital on the sixth post-operative day.

Case 2: C. S., white girl aged three years. This child had swallowed a bobby pin four days before surgery. The pin was lodged in the second part of the duodenum. The possibility of perforation was feared and surgical removal was considered to be indicated. The abdomen was opened through a right rectus incision. An opening was made in the anterior wall of the stomach, a clamp was introduced into the duodenum and the bobby pin was removed. The pin was found to be firmly fixed in the duodenum and it does not seem possible that it could have passed. Post-operative care was similar to the first case except that a stomach tube was not used in this patient. The child made an uneventful recovery and was discharged from the hospital on the fourth post-operative day.

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805 Medical Arts Building.

Compare Figures On Medical Students.

The September 4th issue of the *A. M. A. Journal* publishes some very interesting figures on medical education.

During the past year, for example, there were 22,739 students in 77 medical schools in the United States, 5,543 of whom completed the course and graduated. The same number of schools graduated 4,895 students in 1933.

It is interesting to note that in 1905, prior to the housecleaning in medical education, there were 160 schools, but the annual graduation produced only 5,606 physicians.

VARIED ALLERGIC REACTIONS TO PENICILLIN*

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The purpose of this communication is to summarize partially the current literature on penicillin reactions, to discuss the observations of others in terms of our experience, and to discuss several points of practical importance pertaining thereto. It is, of course, common knowledge that penicillin as used clinically in its several types and preparations is as safe as any first-class drug in use today, and we do not wish to create the impression that it is otherwise. Troublesome reactions of various types do, however, occur, and it is felt that some discussion of the facts relative thereto is pertinent.

The literature on penicillin contains a number of reports of various types of reactions which may be grouped as follows:

1. Urticarial reactions.
2. Vesiculo-bullous, papular, and erythemato-vesicular lesions, with and without desquamation.
3. Contact dermatitis.
4. Serum sickness reaction.
5. Stomatitis, glossitis, and pharyngitis occurring after the use of penicillin pastilles and penicillin solutions in the mouth.
6. Ocular reactions, involving principally the conjunctivae and the palpebral skin, following the local use of penicillin.
7. Asthma associated with giant urticaria and fever in a non-asthmatic.
8. Severe immediate angioneurotic edema.
9. Cutaneous purpura, associated with urticaria, leukocytosis and arthralgia, and gastro-intestinal purpura with swelling of the joints and subcutaneous tissues and a toxic nephritis.
10. Sterile abscesses occurring repeatedly in the sites of intramuscular injections of saline solutions of penicillin.
11. Transient toxic reactions including headache, febrile reactions, nausea, vomiting and diarrhea—attributed to pyrogenic impurities.
12. Questionable reactions including erythema nodosum and syncope.

Upon reviewing the records of allergic persons seen by us during the past several years, eleven cases were found who had exhibited interesting reactions following penicillin therapy. These individuals had been diagnosed prior to their development of untoward penicillin reactions as having variously:

(A) Perennial rhinitis and perennial asthma, 4 cases.
(B) Perennial rhinitis and gastro-intestinal allergy, 1 case.
(C) Perennial rhinitis and epidermophytid reaction, 1 case.
(D) Contact dermatitis, 2 cases.
(E) Epidermophytosis with epidermophytid reaction, 2 cases.
(F) Seasonal hay fever, fall type, 1 case.

Three patients with perennial rhinitis developed acute exacerbations of their rhinitis after they had taken penicillin by various routes. A patient with rhinitis and asthma had a flare-up of both after penicillin therapy. An individual with rhinitis and gastro-intestinal allergy developed an exfoliative dermatitis after penicillin. A second patient with rhinitis and asthma developed a serum sickness type of reaction, as did a patient who had been under treatment for seasonal hay fever. One individual with epidermophytosis and associated "id" reaction exhibited a contact dermatitis following the use of a penicillin ointment; another, however, developed a serum sickness reaction. Two individuals with contact dermatitis manifested exacerbations of their dermatitides following application of penicillin to their skin lesions. One of them subsequently developed severe urticaria and angioneurotic edema when a preparation containing peni-

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cillin was packed in a tooth socket. Various preparations of penicillin were administered and by several routes. The number of patients who reacted adversely is too small, the reactions to the drug were too varied, and the types of preparations too numerous to permit any correlation between the type of allergic disease and the nature of the penicillin reaction. Our observations do not, however, indicate that there is any close relationship between the two.

Disregarding minor urticarial reactions, the cases mentioned above represent most of the reactions observed or known to have occurred in a considerable population of allergic individuals. Many of the allergy patients indicated in their histories that they had had penicillin for various nonallergic ailments such as pneumonia, focal infections, etc., without unfavorable side reactions. Some of them, to be certain, had experienced transient urticarial reactions. The majority, however, had not experienced adverse reactions. Follow-up reports from the allergy patients also provide no evidence of an unusual incidence of untoward side effects.

Let us consider briefly the problem of penicillin reactions as encountered in Naval personnnel who may be presumed to have been relatively non-allergic. One of us was privileged to observe the wholesale use of penicillin in two large Naval hospitals. One of these institutions with 2600 beds was located at a Naval training center in which streptococcal diseases were epidemic. Most of the patients admitted to this hospital had streptococcal diseases and were given intramuscular penicillin in doses of 20,000 units every three hours. A considerable percentage of the patients received multiple courses of the drug. Furthermore, these patients represented a selected non-allergic group, for men who were found to have significant allergic disorders were excluded from the Naval service. Penicillin reactions did, however, occur, and, although no figures are available, are estimated to have occurred in about five per cent of those treated with penicillin. The experience at the second hospital, a center for the treatment of rheumatic fever, was similar. The composite experience of the medical officers, using tremendous quantities of penicillin, in both Naval hospitals was that penicillin is a safe drug. Occasionally therapy had to be discontinued. On the other hand, treatment was frequently continued in seriously ill patients despite mild reactions, and the drug was readministered to reactors. No alarming or lasting ill effects from such measures can be recalled. Reactions were considered as annoyances rather than as occurrences of significant import.

With these observations in mind, it is reasonable to assume that the incidence of penicillin reactions among allergic individuals is not significantly greater, if greater at all, than it is in individuals without previously recognized allergies. It is noteworthy that the reactions observed in the allergic individuals were not more frequent and were in no wise different from, or more severe than, similar reactions observed, or reported as occuring, in a non-allergic population. It is noteworthy that reactions cannot be predicted in allergic individuals as regards frequency, type and severity, with more success than they can be foretold in the public at large or in a non-allergic group.

GENERAL DISCUSSION

Exact figures representing the incidence of penicillin reactions of various types are hard to find, and the figures reported by various observers are not strictly comparable because of variations in clinical material and therapeutic methods. Cormia[1] and associates reported an over-all incidence of 0.5 per cent in 2,000 soldiers receiving prolonged penicillin therapy, whereas Newman[2] has estimated it to be about 30 per cent in dermatological cases treated locally. Anderson's[3] estimate of a 2 to 5 per cent incidence is probably a fair over-all figure.

Urticaria occurred in 3.8 per cent of 130 patients treated with oral penicillin.[4]

Kolodny and Denhoff[5] showed rather conclusively that patients with dermatological conditions exhibit immediate reactions much more frequently after I. M. penicillin than do non-dermatological patients. They showed that the increased reaction rate in dermatological patients is due to an increase in the immediate types of reaction only. Twenty-five per cent of 73 dermatological patients developed immediate reactions to penicillin; whereas, only 6 per cent of 51 non dermatological patients developed immediate reactions. The incidence of delayed reactions was the same in both the dermatologic and non-dermatologic groups and was approximately 7 per cent. Newman's[2] estimate of a 30 per cent incidence is predicated on observations made on dematologic patients treated topically with penicillin. His comment that the incidence in pa-

tients of this type does not mean much because "100 per cent will develop contact dermatitis in time" is interesting. He concluded, however, that individuals with an allergic constitution plus a dermatitis develop contact dermatitis to penicillin preparations more quickly than do normal individuals. Noe's[6] report of a 16 per cent incidence of allergic edema of the eyelids after topical penicillin is in agreement.

Pillsbury[7] and associates have suggested that the incidence of penicillin reactions following intramuscular medication may be on the increase. This observation is of interest since one frequently reads that as penicillin preparations become purer, reactions will become less. Theoretically the increased incidence could be a result of the use of larger doses of penicillin for longer periods of time or to the fact that more individuals have been previously sensitized to penicillin.

Three of our patients with a dermatophytid type of dermatitis became worse after the local use of penicillin ointment. The observed exacerbations may have represented no more than a contact dermatitis to some ingredient in the penicillin vehicles. However, the experience of others has been that eruptions occur most frequently in the sites of previous fungus infection and that they do so following parenteral as well as after topical therapy, which suggests hypersensitivity of the previously infected skin.

One of us treated a chalazion with penicillin ointment. A severe local reaction necessitated discontinuation of the therapy. At a subsequent date, because of a threatened generalized Meibomianitis, intramuscular therapy was instituted. The patient did not develop any local reaction in his eye following the intramuscular therapy.

The above observation, considered in conjunction with Kolodny and Denhoff[5] and Newman's[2] observation of an increased skin sensitivity to penicillin in sites previously infected with fungi, suggests that a fungus infection effects in some way a more profound and lasting sensitivity in the involved skin than does short-term topical penicillin therapy. The results of intradermal skin tests in patients with previous fungus disease also indicate that an antigen may be elaborated by pathogenic fungi which sensitizes the skin to penicillin.

Kolodny and Denhoff[5] were unable to correlate personal past histories and family histories of allergy with the incidence of reactions observed in their 124 patients. Our experience confirms theirs, for, although all of our patients gave personal past histories of allergic disorders and most of them gave positive family histories, no relationship was apparent except possibly in the case of those individuals with epidermophytosis and epidermophytid reactions discussed above.

The importance of previous penicillin therapy in the genesis of undesirable side reactions incident to a second administration of the drug is not well established. Some individuals manifest reactions after taking the drug for the first time. Others develop these reactions when the drug is readministered. Some individuals react every time that penicillin is given to them irrespective of the type of preparation or route of administration. Others who react on one occasion find that they can take penicillin subsequently with impunity provided that a different preparation is used. Still other individuals are able to take the same preparation subsequent to a reaction without untoward effects. In their studies, Kolodny and Denhoff[5] were unable to correlate previous penicillin therapy and reactions referable to it to the incidence of reactions at the time they made their experimental observations. Our experience with Naval personnel, with allergy patients, and with ophthalmological patients leads us to believe that the exhibition of an untoward reaction on one occasion is no contraindication to subsequent therapy with penicillin if judgment is used.

The purity of the penicillin preparation employed and the vehicle used are of great significance as regards the genesis of reactions, when the route of administration is the same. Sterile abscesses occur more frequently, as might be expected, after penicillin-beeswax-peanut oil than after saline solutions of penicillin taken intramuscularly. Such reactions are not allergic reactions to penicillin, in most instances, but are foreign body reactions. Individuals who are allergic to pollens, which occur in beeswax, and to peanuts are, however, subjected to a double or triple hazard when penicillin-beeswax-peanut oil preparations are used, by reason of the presence of the additional allergens. Consequently, it might be anticipated that allergic reactions would result from beeswax peanut oil preparations more frequently than from simpler preparations.

On the other hand transient gastro-intestinal

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disturbances, headache, fever, and malaise would be expected to occur more frequently following parenteral administration of penicillin preparations containing pyrogenic substances than after their ingestion or topical use. Reactions of this type are not specifically related to the penicillin itself but are dependent on the pyrogens present and the route of administration. It has also been amply demonstrated that impurities in the penicillin itself are responsible for many of the untoward allergic reactions observed.[8]

The magnitude of the dose of penicillin administered has, within our experience, been of no moment in the genesis of untoward reactions. It is, of course, understood that if noxious impurities are present which are capable of causing reactions by non-allergic means, then the greater the dose of the preparation, the greater the danger. Reattions of this type are physiological and predictable, whereas allergic reactions occur independent of the size of the dose, and are unpredictable. The recent tendency to use larger and larger doses of penicillin as the supply has become more plentiful, with no appreciable increase in the incidence of allergic side reactions, indicates that the quantity of penicillin, per se, is a relatively unimportant factor in the genesis of penicillin reactions. The concomitant improvement in the quality of the penicillin may, to some extent, explain the fact that reactions have not been seen with increasing frequency.

The literature contains a number of references to penicillin skin tests. Patch tests, scratch tests, and intradermal tests have been used. The lack of a standardized procedure makes interpretation of the results uncertain. Kolodny and Denhoff[5] tested representative groups of individuals who had reacted adversely to penicillin and patients who had not reacted. They found that for intradermal testing, 1,000 to 2,000 units per 0.1 cc. solution were necessary to elicit relatively consistent responses. Of the 15 penicillin reactors tested by them, 11 developed unequivocally positive intradermal skin tests to penicillin. Of 14 nonreactors, similarly tested, only two were positive. Peck and associates,[9] using a similar technique, found the skin tests to be positive in a penicillin reactor. The response to the skin tests subsequently became negative after the patient was desensitized. Various observers, including Schultz,[10] Vickers,[11] Satulsky,[12] and Kolodny and Denhoff[5] have reported positive skin tests in individuals who had experienced various types of penicillin reactions.

On the other hand, Haswell and Wilkinson[13] and others have reported negative patch, scratch, and intradermal tests in patients who had had reactions. The patient of Barefoot and Olansky[14] reacted on two occasions to amorphous penicillin and did not subsequently react when he was treated with crystalline penicillin. Intradermal tests made subsequently were positive to amorphous penicillin and negative to crystalline penicillin. Sullens'[15] case gave a negative response to an intradermal skin test but developed an urticarial reaction higher up on the same arm five hours later. Cormia et al[1] consider skin tests of limited value because they observed that severe reactors frequently showed the same results on skin testing as did nonreacting controls. The remark of Pillsbury et al,[7] "skin tests are unreliable in predicting the occurrence of reactions" epitomizes the situation very well.

Our experience with penicillin skin tests has been limited. It has been observed, however, that patients who exhibit a strongly positive response after patch testing with penicillin ointment get into trouble when penicillin ointments are used therapeutically. In the light of the observations cited above, it would appear that penicillin skin tests are of limited value in enabling one to pick up the occasional severe reactor prior to the institution of penicillin therapy.

Yasuna[16] recently reported two cases of "nonspecific" uveitis who experienced an aggravation of their disease following penicillin therapy. One of us has had a similar experience with two individuals. It would appear that the reaction is somewhat analogous to the Herxheimer reaction. This observation is of considerable importance as it is common practice to treat uveitis with parenteral penicillin. In view of this experience it would appear that penicillin should not be used in the treatment of uveitis except when a syphilitic or gonorrheal etiology is definitely established.

THERAPY

As it is impossible to predict which penicillin-treated individuals will develop reactions, physicians will continue to be confronted with problems related to their avoidance, prevention, and management. The advent on the market of more highly purified penicillin preparations and their general

acceptance may in time materially reduce the incidence of adverse reactions. It is probable, however, that reactions will continue to be a source of annoyance.

When penicillin therapy is indicated, the only precaution necessary to provide a reasonable margin of safety is the assurance that the patient has not previously experienced a severe reaction. When the patient is a known reactor, judgment and caution consistent with the known facts should be exercised.

The anti-histaminic drugs have proved their worth in the control of untoward penicillin reactions. They are particularly efficacious in the management of post-penicillin urticarial reactions and can be used without hesitancy for this purpose. Pyribenzamine and Benadryl are both excellent preparations. If it is necessary to administer penicillin to a known reactor, prophylactic therapy with the selected anti-histaminic drug can be instituted shortly before or concurrent with penicillin therapy. Severe immediate reactions, when anticipated, can be held to a minimum in this way. Once untoward penicillin effects have made their appearance, an anti-histaminic drug can be used in most instances with quite satisfactory results. As the relief of symptoms afforded by Pyribenzamine and Benadryl is impermanent, anti-histaminic therapy must be continued throughout the duration of the reaction. One to five hundred milligrams of either drug per day in divided doses is usually sufficient to make patients with urticaria comfortable. When the relief is incomplete, local therapy with ice bags, antipruritic lotions, starch baths, etc., may be helpful.

When the reaction is severe and the anti-histaminic drugs do not afford relief, it may, on occasion, be necessary to discontinue penicillin. If, however, the need for the drug continues urgent, the use of crystalline penicillin, the substitution of a different brand or a different lot of the same brand of penicillin, or administration of the drug by another route may make it possible to continue therapy. Alterations in the therapeutic regimen of this kind often give gratifying results and certainly warrant a trial.

Adrenalin and ephedrine are at times useful in controlling untoward reactions. As the action of these drugs is relatively short, they are usually not as satisfactory as the anti-histaminic drugs. Nevertheless, they not infrequently provide rapid, and at times complete relief. Their use in conjunction with the anti-histaminic drugs may occasionally render an intolerable reaction tolerable.

Within the past several years, intravenous procaine hydrochloride has been reported as an efficacious measure in the treatment of serum sickness. It has also proved useful as a post-operative therapy to relieve pain and promote rest, and has been used routinely for this purpose at the Memorial Hospital, New York City. One of us has observed its use in a number of conditions, including arthritis, urticaria, and acute erythema multiforme without adverse reaction.

Dressler and Dwork[17] reported the use of procaine hydrochloride (one gram in 500 cc. of isotonic sodium chloride administered I.V.) in a post-operative patient with a severe serum-sickness type of penicillin reaction. Pain was relieved within ten minutes and all symptoms and signs of the reaction had disappeared completely 6½ hours after starting the infusion. Although it would appear that I.V. procaine is efficacious, it is considered potentially dangerous, especially in allergic patients, and should not be used without adequate safeguards.

If it is anticipated that penicillin therapy may be required repeatedly and the patient is a known reactor, desensitization is worthy of trial. Peck, Siegal, and Bergamini[9] reported successful desensitization of such an individual. Twelve desensitizing injections were administered subcutaneously during a 23 day period. The patient subsequently tolerated therapeutic doses of penicillin without ill effect.

Service[18] has reported good results from intravenous nicotinic acid in doses of 35 milligrams in 10 cc. of water in 41 cases of penicillin urticaria.

SUMMARY AND CONCLUSIONS

1. Penicillin is a safe, effective drug but should not be used indiscriminately.

2. The over-all incidence of reactions following its use is about five per cent.

3. Reactions occur in allergic individuals with no greater frequency and are no more severe than in non-allergic individuals. Patients with skin diseases, however, experience a higher incidence of reactions than do non-dermatological patients.

4. The types of reactions which may occur in allergic persons cannot be predicted.

5. A mild reaction on one occasion does not

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usually exclude cautious therapy with penicillin at a later date.

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DISCUSSION

DR. OSCAR SWINEFORD, JR., Charlottesville: It is always important for us to be reminded that drugs cause disease. This paper is, therefore, very timely. It is comforting to remember that few of the many reactions to penicillin are severe. The renal and the blood complications, which we expect rather commonly from the sulfonamides, are negligible.

Several points were brought out which might be repeated. There is a decided tendency for fungus infections of the skin to flare up after the administration of penicillin, especially epidermophytosis. Infection of the mouth with monilia has not been uncommon following penicillin aerosol. We have had two cases of bronchopulmonary moniliasis following the administration of penicillin by inhalation.

A point not mentioned in the paper has been the tendency for penicillin-sensitive organisms to be replaced by organisms resistant to penicillin. In one case, for instance, Pyocyaneus appeared in pure culture in the sputum after the use of penicillin aerosol.

It is not unusual nor unexpected that the incidence of reactions to penicillin was the same in allergic and nonallergic individuals. The allergic individual reacts to things to which he is sensitive and not to other things.

The high incidence of sensitization following topical application of penicillin should be emphasized. This is not unexpected, since penicillin is used topically on diseased skin. The damaged skin becomes sensitized more easily than does normal skin. Therefore, penicillin should be used topically with extra caution.

Dr. Black mentioned that desensitization can be carried out with difficulty. He also mentioned that people who react once need not necessarily react to subsequent administration of the drug. There are good statistical analyses of that point by Dr. Hopkins and his associates in the July, 1947, issue of the *Journal of Allergy*. Dr. Black's warning with regard to the administration of procaine intravenously should be repeated. Most of the local anesthetics are potent sensitizers.

MYOCARDIAL INFARCTION
A Review of 100 Cases*†

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INTRODUCTION

Methods of Analysis. The object of this paper is to review our experience in an effort to evaluate our diagnostic procedures and methods of handling this disease, and to determine whether or not this is in keeping with the experience of other groups, as well as to see if some useful information can be made available to ourselves and to others which will help in the diagnosis and management of the disease.

The cases reviewed were admitted to the hospital from July 1, 1941, through September 1, 1943, and January 1, 1946, through February, 1948; consequently, they are not consecutive admissions. A few cases which were admitted during these periods were not included since insufficient information was present on the records.

The incidence of male to female patients is probably not indicative of the incidence of the disease since our hospital is an industrial institution and the proportion of male to female admissions is unusually high.

The records were reviewed and all of the pertinent information obtained; then an analysis of the data was carried out. No attempt was made to review the literature completely but merely to compare our experience with that of several other series.

Our diagnostic procedures have consisted of a careful history and physical examination, electrocardiograms, sedimentation rate, routine blood counts, and urine examination. On a few occasions fluoroscopic examination of the heart was carried out.

Therapy routinely included bed rest for four to six weeks, low caloric diet restricted in sodium, and the administration of a sedative as needed. Oxygen was administered by means of a tent for the first 48 hours. Digitalization was carried out for heart failure and mercurial diuretics were freely given when indicated. The latter have been employed more frequently during the past twelve months than previously. In fact, on several occasions it was found that the salt and water retention could be controlled by mercupurin alone without the use of digitalis.

Quinidine was given when ventricular tachycardia occurred, when frequent ventricular extrasystoles developed from different foci, or when auricular fibrillation, which developed after the infarction occurred, lasted more than 24 hours.

Demerol was found to be a satisfactory sedative, though morphine was frequently given for severe pain. Atropine was given on several occasions when marked bradycardia and shock developed and on one occasion it was the clinical impression that it was life saving. Dicumarol was given to patients during the past six months. These were selected because of shock, extension of the thrombosis, or thrombo-embolic phenomena. It is now being routinely employed. These cases will be separately reported.

RESULTS AND DISCUSSION

The cases were grouped according to age, sex, and mortality in the different decades from 30 to 90, and these groups are showed in Chart I.

It can be seen that, of the 100 cases, 28 died, a total mortality of 28.0% and that the mortality of the males and females is about the same, 27.9% and 28.5%, respectively.

The youngest case was a woman of 33 years and the oldest a woman age 89 years. The greatest number of cases occurred in the age groups of 50-59 and 60-69 years, there being 32 in the former and 33 in the latter. The mortality in the older group (60-69 years) was 36.6%, while that in the younger (50-59 years) was 18.7%. These figures give a trend only since they are few in number, but indicate that the older the patient is when he develops

*Eighty of these cases were reviewed and reported at the meeting of the Medical Society of Virginia, October 15, 1947.

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CHART I

AGE GROUP—SEX—MORTALITY

	30-39		40-49		50-59	
	No.	Died	No.	Died	No.	Died
M	4	1	11	1	29	6
F	1	1	1	0	3	0
T	5	2	12	1	32	6

	60-69		70-79		80-89	
	No.	Died	No.	Died	No.	Died
M	29	11	11	4	1	1
F	4	1	4	1	1	1
T	33	12	15	5	2	2

Total Cases, 100 — Total Males, 86
Total Deaths, 28 — Total Females, 14
Mortality, 28% — Mortality of Males, 27.9%
Mortality of Females, 28.5%

M—Male
F—Female
T—Total

the disease, the more apt he is to die. This has also been reported by other observers.[1] The total mortality of 28.0% compares fairly well with the series reported by Mintz and Katz (21.8%).[1] Other authors report mortalities from 8% to 53%.[1] The number of females in this series is too small for any conclusion to be drawn, but it has been reported that the mortality is usually considerably higher in females.[1,2]

PREVIOUS HYPERTENSION

Thirty-one individuals had hypertension in the past. This is probably not entirely accurate since this history was not always possible to obtain. If a patient had been told that his blood pressure was elevated or it was found to be over 150 systolic and 90 diastolic during his stay in the hospital, he was classified as hypertensive. In a few instances, a previous hospital record was available.

CHART II

HISTORY OF PREVIOUS HYPERTENSION:

Male	26	30.2%
Female	5	35.7%
Total	31	31%

Angina for at least 6 weeks prior to attack 38
History of Gallbladder Disease 5
History of Peptic Ulcer 1

DROP IN BLOOD PRESSURE			NO DROP IN BLOOD PRESSURE		
Number	Died	Mortality	Number	Died	Mortality
44	16	36.3%	49	12	24.4%

TEMPERATURE ELEVATION			NO TEMPERATURE ELEVATION		
Number	Died	Mortality	Number	Died	Mortality
76	24	31.5%	24	4	16.6%

These thirty-one cases can be broken down (Chart II) into 26 males, or 30.2%, and five females, or 35.7%. It is a common observation that hypertension is more prevalent in women than in men with myocardial infarction.[1] However, the total number of individuals from whom a history of hypertension could be elicited in this series is somewhat lower than is usually reported.[1]

History of Angina. An effort was made to determine whether or not angina was present prior to the occurrence of myocardial infarction, and, though this history was not always available, on the charts, in 38 patients it was found to have existed, indicating that coronary insufficiency had been present for some weeks and was a warning signal that an infarction was impending. A history of angina was recorded in other series and varied from 22.4% to 72.97%.[1,2]

From only five patients could it be definitely stated that gallbladder disease either coexisted or had existed in the past. This was considered to be present if there was a history of cholecystectomy or definite gallbladder attacks with x-ray findings of a non-functioning gallbladder.

Peptic ulcer was found to be associated in only one patient.

Drop in Blood Pressure. Blood pressure fall was considered to have occurred if the diastolic level fell 20 mm. of mercury and the systolic 30 mm. of mercury, or if the blood pressure was low on admission and became elevated as the patient improved. A sufficient number of blood pressure readings were recorded on the charts of 93 of the 100 patients for this purpose and it was found that the blood pressure dropped in 44 patients and did not fall in 49 patients. The mortality of the former was 36.3% and of the latter 24.4%. This difference in mortality is probably significant and indicates that the cases whose blood pressure drops are more severe.

These figures are at variance with those usually reported, since most authors describe a drop in blood pressure in practically all cases.[1,3,4] The discrepancy may be due to the fact that a number of our patients were seen several hours to several days after the attack and that the blood pressure fell prior to admission to the hospital.

Temperature Elevation. The temperature was taken by mouth except when it was thought impossible to obtain an accurate reading, at which

time it was taken rectally. Ideally all temperatures should have been rectal but it was technically impractical to do this.

Seventy-six patients were found to have a temperature above 98.6° F., twenty-four died, a mortality of 31.5%; while of twenty-four patients who did not have a temperature recorded above 98.6° F., four died, a mortality of 16.66%. These four patients were brought to the hospital in shock and died soon after admission.

Elevation of temperature is a well known finding following myocardial infarction and it has been reported the higher the temperature the greater the mortality.[2] This is in keeping with the higher mortality of the present series of those patients who developed temperature elevation and in those who did not.

LABORATORY STUDIES

Leukocytosis was considered to exist if the total white blood count was above 10,000 per cu.mm.

CHART III
LABORATORY STUDIES

Leukocytosis			No Leukocytosis		
Number	Died	Mortality	Number	Died	Mortality
44	16	34.5%	43	7	16.2%

SEDIMENTATION RATE

Number Done	Number Increased	Percentage Increased
87	74	85.0%

Fifty-five patients developed leukocytosis following infarction and, of these, nineteen died (a mortality of 34.5%), while, of forty-three who did not have an increased white count, only seven, or 16.2% died.

This is again consistent with the findings of others that the higher the leukocyte count, the greater the mortality.[2] Usually, however, a greater number of patients develop leukocytosis than is reported here.[3]

Sedimentation rate was performed by the Cutler method, using potassium oxalate as an anticoagulant. In most cases this was done at some time during the first two days after admission and repeated several times during the patients stay in the hospital.

This test was done in 87 of the 100 cases, and was found to be increased in 74 of these (85%). Eighteen of these patients died (24.3% mortality). Six patients who died did not have a sedimentation rate performed. Four of the patients who had a normal sedimentation rate died. No conclusions as to prognosis can be drawn, but diagnostically it was of value.

ELECTROCARDIOGRAPHIC CHANGES

Electrocardiograms were taken frequently during the first week after infarction and then usually at least once a week thereafter. During the years 1941-1943 the standard leads and lead 4F were routinely taken. From January, 1946, through June, 1947, the standard leads and precordial leads CR2, 4, and 5 were employed. Since June, 1947, standard leads, unipolar limb leads, and multiple unipolar precordial leads have been used in all cases suspected of coronary disease. We have not used the esophageal lead.

CHART IV
ELECTROCARDIOGRAPHIC CHANGES

	Number	Died	Mortality Percentage
Total	96	27	28.1
Anterior	33	8	24.2
Posterior	51	16	31.3
Combined	4	1	25.0
Non-specific	8	1	12.5
None	4	1	25.0

BUNDLE BRANCH BLOCK

	Number	Died	Mortality Percentage
Total	10	3	33.3
Left	5	2	40.0
Right	5	1	20.0

Electrocardiographic changes occurred in 96 of the 100 cases. Of these, 33 (34.3%) were anterior, and 51 (53.1%) were posterior, 4 were combined, 8 showed nonspecific changes, and in 4 no changes were recorded.

The mortality of those with anterior infarction was 24.2%, with posterior infarction 31.3%, with changes indicating both anterior and posterior lesion 25%. Only one, or 12.5%, of those with nonspecific changes died, while 3 of 4 who did not show changes survived. These latter four patients were thought to have sustained an infarction clinically. Two developed sudden severe congestive failure without obvious cause and one had pain, elevation of temperature and sedimentation rate, and drop in blood pressure, and the other had typical pain, elevation of temperature, followed by death. In none of these individuals was the precordium explored with the unipolar electrode nor were the unipolar limb leads used. It is, therefore, possible

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that had this been done, changes may have been brought out.

The greater number of posterior infarctions compared with anterior infarctions is unusual,[2,5] and not explained. Other authors[1] have stated that the mortality of anterior infarction is greater than or about equal to that of posterior infarction, and the incidence is about the same.

Bundle branch block was found in 10 patients, in 5 of whom it was right and in 5 left. Two with left bundle branch block died and one with right bundle branch block died. The total mortality was thus 33.3 % as compared with 28% for the series.

PAIN

Ninety-three of the 100 cases developed pain when the attack began. In 51 it was substernal in location and in 36 of these it radiated to one or both arms. Precordial pain was described in 17, abdominal in 10, right chest in 3, and located in the back in 3 cases. There was no correlation between the location of the pain and the location of the infarct.

CHART V

PAIN

Number of Patients Who Developed Pain	93 or 93.0%

LOCATION

Substernal Alone	15
Substernal and Radiation to Arms	36
Precordial	17
Abdominal	10
Right Chest	3
Back	3
Correlation Between Pain and Location of Infarct	None
Mortality of 93 Patients Who Developed Pain	25.7%
Mortality of 7 Patients Who Did Not Develop Pain	57.0%

Seven patients did not have pain. However, three of these had complete heart block with syncope as their initial symptom, and two others had severe heart failure. The sensorium of these patients was clouded and the threshold for pain probably lowered.

The mortality of the 92 who developed pain was 25.7%, while four of the seven (57.01%) of those who did not have pain died. The mortality of painless infarction was thus considerably higher than in the group with pain. It is interesting to compare this with Rosenbaum and Levine's group,[2] of which six did not have pain and five died. However, of 578 patients reported by Mintz and Katz,[1] 18 had painless infarction, and only 27.7% died.

It should be emphasized again that the substernal area is the most common site for pain of coronary disease to occur.

CHART VI

CONGESTIVE HEART FAILURE

Number	Died	Mortality Percentage
23	10	45.4

NO CONGESTIVE HEART FAILURE

Number	Died	Mortality Percentage
78	18	23.0

HEART FAILURE

A diagnosis of heart failure was made if a patient had dyspnea, associated with rales in the lung bases, or had other evidences of salt and water retention, such as elevated venous pressure, edema, or enlarged tender liver.

Twenty-two patients had definite heart failure. Ten of these (45.4%) died. Eighteen of the 78 patients who did not have heart failure died (23.0% mortality).

It appears that the occurrence of heart failure carries a high mortality, which is consistent with other series.[1,2] Mintz and Katz report a 46.2% mortality of patients with heart failure compared with 21.8% of their entire series of 572 patients.

ARRHYTHMIAS

Thirty-nine patients developed arrhythmia of some type during their stay in the hospital and of these 20 (51.5%) died. 8% without arrhythmia died.

CHART VII

ARRHYTHMIAS

Number	Died	Mortality Percentage
39	20	51.5%

Types of Arrhythmias	Number	Died
Ventricular Extrasystoles	18	5
Gallop Rhythm	8	5
Auricular Fibrillation	6	2
Ventricular Tachycardia	4	4
Complete Heart Block	3	3
Partial Heart Block	1	1
Auricular Paroxysmal Tachycardia	1	1
Auricular Flutter	1	0
Auricular Extrasystoles	1	1

It can be seen in Table VII the types or arrhythmias, the number of patients who developed each type, and the number who died.

These findings indicate that individuals who develop arrhythmias have a significantly greater mortality than those who do not. This is in keeping with the findings in other series.[1,2]

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PERICARDIAL RUB

A pericardial friction rub was heard in 13 patients sometime during the course of the illness. Three of these patients (23%) died. Five showed

CHART VIII

PERICARDIAL RUB	Number	Died	Mortality Percentage
Total	13	3	23.0
Anterior	5	–	---
Posterior	5	–	---
Combined	2	–	---
Undetermined	1	–	---

electrocardiographic changes typical of anterior infarction five typical of posterior, infarction, two of a combined lesion, and in one case the location could not be determined. This brings out the fact that the appearance of a pericardial rub does not always indicate the presence of anterior infarction.

The occurrence of pericarditis is said to vary from 13.8% to 48% of reported cases.[1] It is said to be of value prognostically since the presence of this condition usually indicates a larger area of the myocardium involved than in those cases in which it is not present. It has also been stated that pericarditis is more frequently found in patients who died than in those who survived.[6]

MISCELLANEOUS

Chart IX shows the occurrence of a number of miscellaneous happenings.

CHART IX

	Number	Died	Mortality Percentage
Dyspnea	62	--	---
Sweating	48	--	---
Shock	28	13	46.4
Diabetes	11	6	54.5
Pulmonary Infarction	8	6	75.0
Peripheral Thrombosis	2	1	---
Peripheral Embolism	1	1	---
Cerebral Accident	2	0	---

A history of dyspnea was obtained in 62 patients. Sweating occurred in 48 cases.

These findings were therefore important diagnostically here as well as in other series.[2]

Shock was considered to be present if the systolic blood pressure was below 90 mm. of mercury and the patient had the clinical picture of which is usually known as shock; that is, cold clammy skin, pallor, and usually tachycardia.

This condition was found 28 times; 13 of these patients died (46.4% mortality). Other authors have reported a similar increase in mortality[2] when this condition occurs.

Diabetes was found in 11 patients, 6 of whom died. This increase in mortality in the diabetic has also been previously described.[1]

A total of 13 patients developed thrombo-embolic phenomena, eight pulmonary infarction, two peripheral thrombosis, one peripheral embolism, and two cerebral embolism. Eight of these thirteen patients, or 61.5%, died.

Thrombo-embolic phenomena are notoriously serious complications of myocardial infarction and every effort should be made to prevent this. It is possible that the use of dicumarol will reduce the number of these complications. However, at the present time, the value or the danger of the anticoagulants are not known and it is wise to be cautious.

SUMMARY

One hundred cases of myocardial infarction have been reviewed, a survey made of their age, mortality, and clinical findings, and these results were compared with some of those described in the literature.

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DISCUSSION

DR. J. EDWIN WOOD, JR., Charlottesville: The rising incidence of coronary thrombosis with myocardial infarction, although probably more apparent than real, deserves a careful consideration.

This review by Dr. LeHew and Dr. Beckwith at once indicates the importance of the clinical history. Too much emphasis is often given to the electrocardiogram when a careful evaluation of the history of the disease tells so much more. For example, the rate at which attacks of angina pectoris occur is extremely important. A rising anginal rate over an occasional occurrence often denotes impending infarction, whereas some patients may have an occasional attack over a period of years without a serious upset.

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Now as regards the occurrence of temperature in these patients it is well to remember that although the electrocardiogram is positive in only about eight-five per cent of patients with myocardial infarction, fever is present one hundred per cent of the time when death of heart muscle occurs. Careless use of the thermometer often fails to establish this valuable point.

Auricular fibrillation in association with myocardial infarction is an unfavorable sign and general opinion favors the use of quinidine to maintain normal rhythm if possible.

Myocardial infarction need not and frequently does not carry an unfavorable future. Many of us have patients who have lived many happy and successful years following myocardial infarction. A fatalistic attitude in this regard is to be deplored.

Although the final reports on dicumarol have not been published, advance studies seem to indicate the advisibility of the use of this drug in many cases where it is properly controlled.

DR. OSCAR SWINEFORD, Charlottesville: I should like to ask Dr. Beckwith two questions. One, the number of patients who had dyspnea before they had signs of coronary thrombosis; the other, elaborate a little on the patients who did not have pain.

DR. BECKWITH, closing the discussion: Answering Dr. Swineford's first question, as to those who had dyspnea before the coronary thrombosis, we did not get the information as to whether they had it before or after they got the pain. Of the seven without pain, three, as I said, had severe heart failure beginning very suddenly. Three others had complete heart block with syncope; they may have had pain, but the records do not show this. The others came into the hospital and routine cardiograms were done which showed a rather typical infarction. They did not complain of pain but had been "feeling bad" for several days. Of those who did not have pain, four had other signs which were rather characteristic—i.e., heart failure, syncope, and electrocardiographic changes.

I also want to thank Dr. Wood for his discussion.

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deGraaf was born at Schoonover, Holland. He studied at Delft and later in France under Sylvius. Upon his return to Delft, he began the practice of medicine. He was the first to study the pancreas and its digestive juice. He employed pancreatic and parotid fistulae for collecting digestive fluids. In 1668 he published a classic account of the testicle. This work also contains an essay on the use of clysters, which were then coming into fashion. His great work *Demulierum organis generationi* embodies the best knowledge of the generative organs of women of his time. It contains the first description of the structures which Haller called the Graafian vesicles in his honor. deGraaf demonstrated ovulation, anatomically, pathologically and experimentally.

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INDISCRIMINATE USE OF ESTROGENS IN THE MENOPAUSE*

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The increasing number of patients seen with uterine bleeding due to over-stimulation of estrogenic hormones, and a recent article by Ayre[1], showing a definite relation between nutritional deficiency, excessive estrogens, and inflammation as a possible cause of cancer of the cervix, led me to examine some of the effects of excessive estrogens. I would, therefore, like to show you some of the dangers of the excessive use of estrogens in the menopause, and at the same time try to show you how they may be limited.

There is only a small percentage of women going through the menopause who will need any therapy. Too many of us, especially during the past few years when we did not have time to examine patients as we would like, have been prompted to call every ailment a woman has between the ages of 35 and 50 as due to the menopause. We would explain to them that their symptoms were due to "change of life", and as a great many had been listening to their friends explain their symptoms as due to menopause, they likewise would accept the diagnosis. Following this, the patient was given numerous injections of estrogenic substances, and, in most cases, it was given by the nurse, the patient not seeing the physician again for a long period of time. Another factor which may cause this long-continued course of estrogens, is financial. I have often heard physicians say that their office expenses were paid by injections of estrogenic hormones given by their nurses. If most of these patients had been adequately examined, they would have been found to have something entirely different from the menopause. Those cases which had typical symptoms of the menopause, including numerous vasomotor symptoms and cessation or irregular menstrual periods, could have been treated with a little psychotherapy along with mild sedation.

Now let's take a look at some of the damages that can be done by the indiscriminate use of estrogenic substances, both in natural form, and the more recent synthetic or conjugated types of estrogens. There has been a great deal of controversy on the question of whether estrogenic substances can cause cancer or not, and the general conclusion is that they cannot, if given in the usual therapeutic doses. There are a number of post-menopausal women with carcinoma of the cervix, who at some time will have a hyperplasia of the endometrium, suggesting estrogenic stimulation[2]. Women who have late menopause, that is, between the ages of 50-55, are more prone to have adenocarcinoma of the uterus. Randall[3] states that a woman experiencing a functional menorrhagia or metrorrhagia at the menopause, particularly a woman with evidence of persisting estrogenic effect in her post-menopausal years, should be regarded as predisposed to the development of adenocarcinoma of the uterus. It has also been found that in cases of granulosa-cell tumor[4] of the ovary in post-menopausal women, the incidence of carcinoma of the uterus is very high. Since this type of tumor causes an abnormal estrogenic stimulation, it is highly suggestive of estrogen-cancer relationship.

As stated above, Ayre[1], in a study of a number of cases of squamous cell carcinoma of the cervix, found that there was a definite correlation between the infection, excessive tissue estrogen, and lack of vitamin B_1 or thiamine chloride as a causative factor in the production of a cancer of the cervix. He stated: "Estrogen fixation and concentration in infected cervical tissue is believed to be a gross stimulating factor pre-disposing to cancer." Another factor which may cause us to think that estrogen may be connected to cancer in some way is the fact that in malignancy of the breast, with metastasis, in the young woman, marked improvement is shown by surgery or castration by radiation, and a substitution of the male sex hormone.

Excessive use of estrogenic hormone may produce excessive bleeding[2]. There are women who, for no other reason except the menopause, have excessive amounts of uterine bleeding, and the addition of estrogenic substances markedly increases their bleeding. There are other women who show no tendency to bleed until they have been given rather extensive courses of estrogens for their vasomotor

*Read before Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, December 3-4, 1947.

symptoms. There are still others who show a rather marked amount of uterine bleeding following the withdrawal of the hormones. Most of these cases will completely clear up following the discontinuance of the medication. Curtis[5] states that estrogenic therapy has completely disoriented the medical appraisal of menopausal uterine bleeding. The endometrial biopsy following large doses of estrogenic substances, so closely resemble adenocarcinoma in some cases that it is often confusing to the most experienced pathologist. If the medicine is discontinued for several weeks, the pathological diagnosis becomes much easier. There are a few patients who will continue to have some vaginal bleeding, and a diagnostic currettage will have to be done to rule out malignancies.

The excessive or prolonged use of estrogenic substances will often cause prolongation of readjustment. Most of the symptoms of menopause are thought to be caused by the surplus of gonadotropic stimulating hormones of the anterior pituitary gland, due to the withdrawal of estrogenic hormones, rather than the lack of estrogenic hormones. Hamblen[6] and his co-workers are of the opinion that besides having a compensating hyperactive pituitary gland, you also have hyperadrenalism, with production of adrenal cortex substances which ultimately stabilize the endocrine system. Therefore, the long-continued use of estrogenic substances only tends to retard the readjustment to the lack of estrogenic hormone.

One of the factors that enters into the indiscriminate use of estrogens is addiction. There are a few people who become "shot-conscious" and require injections of estrogenic hormones, or saline for that matter, to relieve their symptoms. There are also a few people who, having been given large amounts of estrogenic substance in pill form, become addicted to the pill. I have seen several patients who have been given stilbestrol of one manufacture, when changed to another in identical dosage, complain from lack of benefit from this second drug, simply because it was not of the same color or shape. A factor which aids addiction is the fact that, in some localities, estrogenic substances can be purchased over the counter without prescription. A large number of patients or some other persons have been taught to give the injections without the supervision of the physician.

Long-continued use of estrogenic hormones in injectable form creates quite an expense to the patient, both in physician's bills and in loss of time and traveling expenses getting to the doctor's office several times a week.

Then, too, there are patients who have symptoms which they think are due to menopause, which arise while under treatment. They fail to say anything to the physician or the nurse, in the office where the nurse gives the injections. These symptoms sometimes may be evidence of a rather serious disease such as malignancies of the cervix or uterus. A good example of this was a case that a member of this Society told me was referred to him. She had been under treatment for two years or more, during which time she received several injections a week of estrogenic hormones. While under treatment she began to have some vaginal discharge which later became bloody and rather profuse. Not until she had profuse vaginal bleeding did she mention the fact to the nurse or the doctor; and, when finally seen, was found to have an advanced carcinoma of the cervix. This patient had been going to the doctor's office during this period of time, and thought the bleeding a part of the symptoms of menopause rather than some other disease.

Most of these dangers can be overcome if we go about the management of the patient with menopause in a systematic way.

The patient coming to us for treatment should have a complete examination, including a thorough psychiatric study. Greenhill[7] states that if physicians would remember that psychoneurosis of many years standing, tension states and reactive depressions are the most common psychiatric disorders of the involution age, and were to look for these conditions in their patients of that age, errors in diagnosis and treatment would be obviated. Those patients who, after careful examination, are found to have a true menopausal syndrome with severe vasomotor symptoms, which is usually the factor causing most patients to consult us, may be divided into several groups for treatment. In the first group we would place those patients who have a family history, or who have had some type of malignancy, especially of the genital tract or breast. We would also place in this group patients with a history of menorrhagia or metrorrhagia, those with chronic cervicitis, and those with artificial menopause. We would tend to treat them by means other than estrogens, as they are definitely contra-indicated in this

class of patient. There are a number of drugs which can be substituted for estrogens.

Christy[8] has found that vitamin E in the form of a synthetic preparation, such as ephynal acetate, has been very helpful in a large percentage of menopausal patients who fall into this group. I have also treated a few patients who have menopausal symptoms with 2.5 mg. of ephynal acetate, b.i.d., and have obtained splendid results in most of them. This seems to be a comparatively safe drug, and there have not been any untoward after-effects from it, and it is well tolerated.

There have also been several articles reporting the use of the male sex hormone in the menopause. Gusberg[9] found that 20 mg. of methyltestosterone by mouth daily for four weeks, and 10 mg. daily for two weeks thereafter controlled the symptoms of most menopausal patients. By using a small dose, one does not run into the bad side-effects usually found in the use of the male hormones, such as increase in the amount of hair on the body and abnormal enlargement of the clitoris. The use of the male sex hormone in the female, according to Curtis[5], is rational and not harmful, contrary to the opinion of a number of people. A normal woman produces and excretes almost as much androgen in the urine as the male. It has been found that the male sex hormone inhibits the pituitary gonadotropic activity, and at the same time has an inhibiting effect on the uterine muscles. It also does not cause a hyperplasia of the endometrium. Due to these findings it would seem that the male sex hormone would be the drug of choice in treating the menopause since it does not produce excessive bleeding and prohibits the gonadotropic activity of the pituitary, which is thought to be the chief cause of the vasomotor symptoms in the menopause. The main objection to the use of the male sex hormone is its cost, as it is more expensive than synthetic estrogenic products given by mouth. Much smaller doses of androgen can be given if it is slowly absorbed in the mouth, as the drug goes directly into circulation, thus preventing large amounts of the drug being destroyed in the liver.

In those cases which do not fall into the above classification, or for any other reason estrogens are not contra-indicated, estrogenic hormones or synthetic estrogen in some form or other may be given without much danger. They should be given only for a short period of time and in as small doses as possible. One of the synthetic estrogens will usually be found to be satisfactory in most cases. Diethyl-stilbestrol, or stilbestrol, as we are accustomed to calling it, was the first of the numerous synthetic drugs used, and when given in small doses was tolerated rather well. However, there are about 10% of the people who have gastric disturbances along with other symptoms which will prohibit its use. There are several other synthetic estrogens which have been found to be less toxic, such as meprane[10], dienestrol[11], hexestrol, and benzestrol. I have found hexestrol to be satisfactory, both plain and occasionally in combination with small doses of phenobarbital. Whenever one of these drugs is prescribed, it should be used in the smallest dose possible to relieve the symptoms and a prescription for about two or three weeks treatment should be given. The druggist should be instructed not to refill the prescription. The patient should be instructed to return to your office at the end of two or three weeks, at which time you may determine whether she is receiving benefit from the drug, and, if not, stop its use. If it is found to relieve her symptoms, another prescription for a small amount can be given. At the same time the patient should be told of the dangers of the drug, and that prolonged use of it will only cause prolongation of her menopausal symptoms. I believe the long-continued use of estrogen is more harmful than large doses for a short period of time.

There will be a few people who will not be able to tolerate any type of synthetic estrogenic hormone, and therefore have to be given natural or conjugated estrogens in the form of injections. They should be given only enough to relieve their symptoms, which will probably be one or two injections of about 10,000 units once or twice a week. This should be kept up for only about four to six weeks, following which it should be discontinued for as long a period as possible. Due to the findings of several authorities[12], I believe that the vitamin B complex should be given to patients receiving any type of estrogenic substance. As stated above, Ayre[1] found that there was a definite lack of B_1 in a large percentage of his cases of carcinoma of the cervix. It has been proved that vitamin B_1 is necessary for the liver to break down the estrogens. Since there does not seem to be any harmful effect in moderate doses, and in spite of its having anything to do with the preventing of malignancies, I

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do not believe the use of vitamin B would in any way be contra-indicated. All infections of the genital tract, especially chronic cervicitis, should be cleared up, as infection has been suggested as an important factor in the cause of malignancy.

CONCLUSION

The excessive use of estrogenic substances may be a factor in the cause or stimulation of cancer. It will also cause excessive uterine bleeding as well as prolongation of the menopause. Estrogens may be habit-forming as well as expensive to the patient if not used judiciously. These factors may be prevented if cases are carefully selected and such substances as vitamin B_1, vitamin E and male sex hormone are substituted for estrogenic substances. Small doses of estrogens given over a short period of time in selected cases are desirable, but self-medication should be discouraged.

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Seat Next To Driver Most Dangerous.

Automobile passengers occupying the front seat next to the driver are in the most dangerous position in the car, according to a Detroit plastic surgeon writing in the May 22 issue of *J.A.M.A.*

In his report, Claire L. Straith, M. D., chief of the Plastic Surgery Division, Harper Hospital, Detroit, says:

"Drivers occupy the safest seat in the car; protected by the steering wheel, they escape injury in many severe accidents. 'Guest passengers' in the front seat beside the driver are, on the contrary, in the most dangerous seat in the car because of their unprotected position in case of sudden stops."

According to the article, occupants of the "death seat" beside the driver are injured at the rate of about three to one, as compared to the driver. In a study of 50 consecutive patients with facial injuries from automobile accidents, Dr. Straith discovered that about 70 per cent were young women and girls who had been riding in the front seat next to the driver. Substantiating his "death seat" theory, the Detroit surgeon cites figures secured from the Detroit police department, showing that in 219 accidents involving multiple occupants, 260 passengers but no drivers were injured.

According to the article, the Detroit study showed that more than half of those front seat passengers involved in auto accidents sustained injuries of the head, including facial cuts and damage to the teeth, chin, nose, cheeks, ears, forehead and skull.

Among the remedies suggested by the writer to reduce the "death seat" danger are removal of all knobs, cranks, drop down ash trays and sharp ledges from the dash board and the use of rubber padding on the dash in front of the guest passenger.

A REPORT OF SIXTY-TWO CASES OF INFECTIOUS HEPATITIS OCCURRING IN 1946, STATION HOSPITAL, CAMP LEE, VIRGINIA*

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At the Station Hospital at Camp Lee in 1946 sixty-two patients were hospitalized with acute infectious hepatitis. These patients constituted a major problem for the medical service in regard to proper treatment during their prolonged hospitalization, and in the attempt to determine when they were well.

Of the sixty-two patients fifty became ill while stationed at Camp Lee. The other twelve were transferred from surrounding Army installations, or became ill while on terminal leave.

Except for three patients, all were believed to have had infectious hepatitis of the epidemic type. Those three were believed to have had serum hepatitis; two, following the use of plasma transfusions given at Camp Lee, and the third became jaundiced forty-five days after the injection of yellow fever vaccine.

For the most part the problem of diagnosis was not difficult. Before complete studies of history and laboratory work were made, confusion existed with patients who were later proven to have had exposure to toxic agents. One patient, while being treated for infectious hepatitis, later gave a history of having had exposure to carbon tetrachloride just before his illness. A second patient had hepatitis following the use of fuadin for the treatment of granuloma inguinale. A third had hepatitis caused by sulfadiazine. One other patient believed to have had infectious hepatitis was found to have congenital hemolytic icterus. These patients were not included in this series. Several patients were initially returned to their quarters or were hospitalized on acute respiratory wards when their illness began with fever, chills, and generalized muscle aching.

Of the sixty-two patients, all were males between the ages of seventeen and thirty-seven, except for one patient, age forty-seven, who had serum hepatitis. There were thirty-seven white patients, twenty-three negroes, one Puerto-Rican, and one American Indian.

In the majority of the cases there was a preicteric[1] or prodromal stage of illness. When this stage existed, it was rarely longer than one week, and most frequently lasted four days. The longest definite prodromal stage was twenty-one days. Interestingly enough, in thirteen of our cases the very first indication of illness was some manifestation of jaundice, usually dark urine or occasionally yellow sclera.

The commonest symptoms[1] in the preicteric stage were anorexia, nausea, fever with mild chilly sensations, epigastric discomfort and pain, weakness, vomiting, generalized muscle aching, headache, and itching, occurring in that order. When jaundice occurred at the onset of illness similar symptoms were present. For the most part the symptoms were remarkably similar and repetitive in all cases. The main variation was the degree of severity. One patient with abdominal pain was admitted to the surgical service for observation, and fortunately was not operated. We have recently admitted one case operated for acute appendicitis in another hospital, in the preicteric phase of acute hepatitis.

It was not possible to accurately determine, from the early symptoms, how severe the illness would be. The degree of jaundice was usually greatest on the eighth to the tenth day of illness. There was great variation in the time of illness when jaundice was deepest. The jaundice usually lasted two to three weeks in cases whose recovery was without any signs of chronic hepatitis. All patients with an icteric index of over one-hundred were found to remain in the hospital at least three months.

Thirty-eight, or sixty-one per cent of the patients had enlarged tender livers during their illness. Only one patient was noted to have splenic enlargement. Ten patients, or sixteen per cent, had tender enlarged posterior cervical lymph nodes. Bradycardia was infrequent. Tachycardia was noted corresponding to the degree of fever present.

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1. Hepatitis, Barker *et al.*, *J.A.M.A.*, August 4, 1945.

Most patients were improved after twenty-four to thirty-six hours of bed rest. Intravenous fluids, when required, were generally used only in the first week of hospitalization. At the end of one week in bed, lessening of jaundice was observed in most patients.

In none of our cases was a marked diuresis[2] with a concomitant improvement of liver function tests noted during the early convalescent stages of the disease. I suspect it was because this symptom was not sought by attending doctors.

The patients, on reviewing their records, all seem to have had an extremely prolonged hospital stay and convalescence—even those we thought of with an average mild illness. In this series, the shortest period of hospitalization was twenty-six days in a patient sick fourteen days prior to admittance. The longest period of hospitalization was two-hundred and forty days in a patient with two remissions of mild fever, recurrent deep jaundice, and hepatomegaly. This man has recently been returned to duty feeling well and so far has had no complaints. Two of our patients have been ill well over six months and have been transferred to a General Hospital where they still remain, with limited exercise tolerance, easy fatigability, occasional episodes of nausea and fever, and hepatomegaly. The most frequent length of hospitalization was between seventy to eighty days.

The most common reasons for prolonged stay were, in the following order, the slow return of liver function tests to normal values; persistent subjective complaints of mild nausea; right upper quadrant discomfort after meals; easy fatigability; and persistent hepatomegaly.

One of the patients died on the twenty-seventh day of an illness suggestive of what Lucke and Mallory[3] have described as a fulminant form of infectious hepatitis. This was a twenty year old negro on terminal leave at his home in Lynchburg, Va. He became sick two weeks prior to hospitalization with anorexia and several episodes of vomiting. He noted weakness and mild, almost constant nausea for seven days before hospitalization. One week before admission his urine became dark in color and for three days prior to admission he noted yellow sclera. When first examined he was afebrile, deeply jaundiced, and did not feel very ill. There was marked hepatomegaly. He ate well and had only slight nausea during the first week under treatment. Because of deep jaundice he was given from the beginning supplemental intravenous glucose, parenteral vitamin K, and a high protein, high carbohydrate, and a low fat diet.

The patient was not cooperative about remaining on bed rest. Ten days after admission he became mildly lethargic; in the next five days he became progressively more lethargic, irrational, delirious, stuporous, and after forty-eight hours in complete coma, he died.

Terminally, hypertension, persistent vomiting, hypoglycemia, and prolonged prothrombin time were present, as described by Lucke[4].

During the hepatitis epidemic occurring in the spring and summer of 1942 in our Army there were 51,337 cases reported. Many of these cases followed the use of yellow fever vaccine. There were one hundred and twenty-five fatal cases in this series, giving a mortality rate of 0.24 per cent.

Autopsies on these patients invariably revealed the characteristic changes of idiopathic red or yellow atrophy of the liver. In the gross, the livers showed large red meat-like areas which were very bloody, and other areas of pale yellow bile-stained tissue. Microscopically, the red areas showed complete loss of liver cells. The yellow areas showed regeneration of liver cells and the smaller bile ducts.

In the epidemic occurring in the Armed Forces from August, 1943, to April, 1945, there were 68,000 cases of hepatitis reported[3]. In these cases yellow fever vaccine had not been given previously. However, nearly one-half of the 196 patients who died in this series had previously received combat trauma and were believed to have had plasma or blood transfusions. The mortality rate in this series was 0.3 per cent.

Fifty-three per cent of the deaths occurred within ten days, or less, of the onset of the illness. Thus, the name "fulminant" form of hepatitis.

Gross examination of the liver in these cases belied the severe hepatic damage found microscopically. Most of the livers were small, with a wrinkled

2. Labby and Hoagland: Alteration in Body Fluid During the Acute Infectious Hepatitis, *Proceedings of the Society of Experimental Biology and Medicine*, October, 1946.

3. Lucke and Mallory: Fulminant Form of Infectious Hepatitis, *American Journal of Pathology*, September, 1946.

4. Lucke: The Pathology of Fatal Epidemic Hepatitis, *American Journal of Pathology*, May, 1944.

capsule, and the cut surfaces had an exaggerated nutmeg appearance.

Microscopically, complete disappearance of liver cells was seen. The reticular framework remained intact, and the inter-recticular spaces were filled with monocytes and red blood cells, or the framework was collapsed.

The microscopic sections on our patient show many of these findings.

It is important to realize these changes occur to some degree in all cases of hepatitis. These changes have already occurred early in the disease and are present when the patient first presents himself for diagnosis and care.

In hepatitis considerable aid is obtained from the laboratory. Not only in diagnosis, which is usually easily made from the history and physical examination, but, more important, in following the clinical course after clinical jaundice and hepatic enlargement have disappeared. At this hospital we have found, as have other observers[5,6], that the bromsulfalein retention, the thymol turbidity, and the icteric index are of great value. Other tests have been used, but we have relied for the most part on these three. When the above tests returned to normal; when the patient was free from abdominal discomfort and could do moderate exercise without untoward symptoms; and when he returned from a brief furlough feeling well; the patients were returned to duty.

Two patients were believed to have had serum hepatitis. The first was a 34 year old civilian employee at Camp Lee, who received plasma on 8 October after sustaining head injuries in a motorcycle accident. On 15 December, or approximately sixty-seven days later, he developed nausea, anorexia, and vomiting. The patient became icteric one week later and was admitted to the hospital after two-weeks of illness, at which time he was vomiting repeatedly and was totally unable to retain food. His icteric index rose to 98 on the twenty-first day of illness, and then subsided. Except for one recurrence of abdominal pain and jaundice in the fifth week of illness, the patient has done well and is now ready for discharge. The second patient, a 46 year old white sergeant, had a plasma transfusion on 31 March 1946 after an operation for a perforated duodenal ulcer. He was well and awaiting retirement from Army service, when he developed nausea, headache, and dark urine on June 7th, 1946, or seventy days after transfusion. He had hepatomegaly and deep jaundice with acholic stools for several weeks. His icteric index rose to 124. The deep jaundice remained for twenty-two days and then gradually subsided after a ten day period.

The third patient in this series, who may have had a form of serum hepatitis or artificially-induced hepatitis, gave a history of yellow fever vaccination in Germany forty-five days before becoming ill. Unfortunately, he went AWOL soon after admission and we have not been able to check his immunization record. The patient had an icterus of 40, an enlarged, tender liver, a high thymol turbidity, and marked B. S. P. retention when last under observation.

Thus far, a rather typical series of cases has been presented. Several questions immediately arise. What is the disease, or are there two diseases, as is thought most likely? What is the cause? How is the disease spread? How may it be prevented, and how may we best treat it?

Much has been learned during the past war. Much is still unknown. It is known that epidemic hepatitis and serum hepatitis are virus diseases, but the icterogenic agents have never been seen, cultured, or transmitted to laboratory animals. The virus is in the blood and feces of humans in the early pre-icteric and icteric phases in epidemic hepatitis and in the blood of humans in the early phases of serum hepatitis[8]. It has withstood heating to 56° C. for thirty minutes, and it passes through a Chamberlain filter. Thus, it does classify as one of the so-called "virus" diseases. To date, filtrates of the stools of volunteers with active serum jaundice have not produced the disease in human volunteers, whereas, filtrates from the stools of patients with active epidemic hepatitis have produced, either by oral or parenteral inoculation, epidemic hepatitis in human volunteers[9].

These facts help explain some of the differences between infectious (epidemic) hepatitis and homologous serum hepatitis. For sometime it has been

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observed that secondary cases, not related to the injection of blood products, are common in infectious hepatitis, but very uncommon in serum hepatitis. It does not explain the difference in incubation period of 20-40 days seen in infectious hepatitis, as opposed to 60-120 days found in serum hepatitis; nor the fact that infectious hepatitis is uncommon in people over forty years of age, while serum jaundice occurs at all ages. The lack of heterologous immunity in two diseases, so clinically and pathologically indistinguishable, is also explained.

The mode of transmission is not entirely clear. There are several epidemics reported in which the transmission has been quite accurately demonstrated. It is known that water borne[10], milk borne[11], and food borne[12] epidemics have occurred. The natural route of transmission is believed to be the oral-gastro-intestinal route[13].

Most epidemics have occurred under poor sanitary conditions and in the early fall months. The height of the epidemic at Camp Lee occurred from late July until latter October. Evidence has been presented that close contact[14] of people may be a factor, as also may be the shifting of non-immune[14] populations into an endemic area.

Outbreaks of serum jaundice have been noted in many large diabetic and venereal disease clinics. That outbreaks occur where needles are not thoroughly cleaned and autoclaved is an established fact. The re-use of needles sterilized only in alcohol is a dangerous procedure. As little as 0.01 cc. of serum can transmit serum hepatitis.

For many years infectious hepatitis has been recognized as a childhood disease (ages 5-17) usually not too virulent or serious. Epidemics were frequent in orphanages, summer camps, and military camps. It is believed many people have subclinical mild cases without jaundice, much as we now believe happens in poliomyelitis. The natural history of the disease supports the concept of a widespread immunity in the general population. Confirmatory evidence along this line is offered by the demonstration of the protective effect offered by human globulin when used early in the incubation period.

The use of gamma globulin to protect individuals exposed to hepatitis was first done by Stokes and Neefe[15] during a water borne epidemic at a summer camp for boys and girls in the Pocano Mountains in August, 1944. Two hundred and eighty-nine children out of five hundred and seventy-two had not already contracted hepatitis when the experiment was begun. There was enough globulin available to inject fifty-three children. Of the two hundred and forty-six children who were controls, hepatitis developed in seventy per cent of the girls and sixty-nine per cent of the boys. Of those given gamma globulin hepatitis developed in eighteen per cent of the girls and in thirteen per cent of the boys.

Similar successful results have been reported by Havens[16] in an epidemic occurring in a Catholic Children's Home in New Haven in 1945, and by the surgeons[17] in the Fifth Army in the Mediterrean Theater of Operations in an air bombardment group during early 1945.

The use of gamma globulin appears to be effective for a period of six to eight weeks[18]. Its effectiveness is enhanced by virtue of the long incubation period of the disease. There is, as yet, no evidence that globulin is effective once the active disease has begun. Human globulin has never been known to cause serum hepatitis following its injection.

Oliphant[19] has found that irradiation of an icterogenic serum, which was known to be capable of causing hemologous serum jaundice, for a period of six minutes, resulted in complete inactivation of the icterogenic agent. This method, if it could be practically carried out (at large donor centers) could theoretically eliminate all cases of homologous serum jaundice due to plasma transfusions.

10. Neefe and Stokes: Water Borne Infectious Hepatitis, *J.A.M.A.*, August 11, 1945.
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The virus of infectious hepatitis is not attenuated by the usual methods of water chlorination in which one part per million residual chlorine is left in the drinking water[20]. By a process of super chlorination in which fifteen parts per million residual chlorine is exposed to the drinking water for thirty minutes, marked attenuation of the virus is obtained.

Once the illness has developed, all authors agree on three cardinal principles of treatment. These are bedrest, a proper diet, and the avoidance of substances injurious to the liver.

Capps and Barker[21], in their planned study as to the management of 2,000 cases of infectious hepatitis, decided on the following criteria for the ambulatory status: 1. At least three weeks of bedrest. 2. The absence of a tender enlarged liver. 3. The absence of symptoms of nausea, weakness, and anorexia. 4. A normal serum bilirubin for one week. 5. A B.S.P. test of under five per cent retention in one hour.

For many years a diet of high caloric and high protein content has been advocated. Usually a low fat diet was recommended. Recently a series of thirty-three alternate patients at the Rockefeller Hospital[22] were fed a diet high in fat and high in protein. Their course was plotted against alternate cases of young Naval personnel fed a high protein, low fat diet. The observers found no untoward effect in either diet. Patients fed the high fat diet had less nausea, gained weight much earlier in their course of illness, and had a return of normal B.S.P. function on an average of eight days earlier than those men fed a low fat diet. Fats fed were from milk, cream, eggs, and butter, which are made up of a high content of unsaturated fatty acids and fatty acids of short carbon chains.

The main problems as far as toxic substances are concerned are the avoidance of ether anesthesia in the prodromal phases of hepatitis and abstinence from alcohol. At Camp Lee the use of alcohol has been at times a troublesome problem in the convalescent stages.

In the early stages of the disease when liver damage is severe and there is considerable water retention and scanty urine, judicious care should be used in the choice of medications and the choice of intravenous fluids. A fluid intake of 3,000 cc. daily is sufficient, and normal saline should be avoided unless there is great salt loss from vomiting or diarrhea. Vitamin K should be given if the patient shows bleeding tendency or if the prothrombin time is elevated. The dose should not be over 5 mg. parenterally. If this does not control the prothrombin time whole blood transfusions are indicated. For controlling abdominal pain atropine is preferred over morphine as the latter may have exaggerated and unpredictable effects in severe liver disease. Enemas are preferred over saline cathartics, and we have used pencillin rather than sulfadiazine when needed for intercurrent infections.

Infectious hepatitis was the only pandemic disease of our troops in the recent war. Because of its increased military and civilian importance, much clinical and experimental study has recently been done by many men. As a result, increased knowledge of the pathological processes, the etiology, the transmission, and the prevention of the disease has been gained. Also, a more rational guide to treatment has been evolved.

20. Neefe, Stokes, Boty, and Rheinhold: Disinfection of Water Containing Causative Agent of I.H., *J.A.M.A.*, August 11, 1945.
21. Capps and Barker: The Management of Inf. Hep., *Annals of Int. Med.*, March, 1947.
22. Hoagland, *et al.*: Analysis of the Effect of Fat in Diet on the Recovery of Infectious Hepatitis, *American Journal of Public Health*, November, 1946.

XUM

COLLES' FRACTURES*

THEODORE B. STRANGE, M.D.,
University of Virginia Hospital,
Charlottesville, Virginia.

Fractures occurring in the radius within one inch of the wrist joint were first described in 1814 by Abraham Colles in the Edinburgh Medical and Surgical Journal. Due to its common occurrence, it is one which the general practitioner is often called upon to treat. Unfortunately it is generally thought to be a simple type of fracture and is turned over to the first year interne. However, it is a difficult fracture to properly reduce, to maintain, and to tell when healing is sufficient to commence much needed wrist motion.

Three structures are disrupted in varying amounts in the average Colles' fracture. First, the radius, which is longer than the ulna by about 1 cm. in the adult, is shortened and may be of equal length or shorter than the ulna. Second, the distal end of the radius which is the proximal portion of the wrist joint and which normally has a facing of 15 degrees from the perpendicular with the tilt towards the palm of the hand, loses this facing to a varied degree. Third, the carpal ligaments which bind the radius and ulna together at the wrist are torn and there are varying amounts of separation between the ends of these bones.

1-a

1-b

To properly reduce this fracture, these three separate and distinct injuries must be corrected and maintained. The radius is looked upon as a continuation of the hand and wrist into the forearm, so it is obvious that proper reduction of this fracture is necessary for full use of the wrist and hand. A loss of length causes radial deviation, loss of facing causes dorsal angulation with friction of the flexor tendons over the anterior ridge giving rise to recurrent tenosynovitis, and lastly the unrestored carpal ligaments result in a weak, unstable and easily fatigued wrist.

In this clinic we employ the following method of reduction, immobilization and treatment. With the patient under a satisfactory general anesthetic, usually sodium pentothal, and with suitable counter traction at the elbow, the distal radial fragment is pulled in the line of deformity. A strong, steady pull will break up the impaction. Following this, the facing is restored by pressing the distal fragment in a palmar direction using both hands, one on each fragment holding it much as one would when breaking a stick over one's knee. Holding the reduction securely, the wrist is shaken up and down. The hand should move normally at the wrist if the fracture has been properly reduced. We often

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2-a

check the reduction by fluoroscopy before applying a cast and routinely take post reduction x-rays. A padded plaster of paris cast is applied over two to three turns of sheet wadding. Felt is applied to the bony prominences and pressure areas. The cast extends from below the elbow to the metacarpal phalangeal crease of the fingers and the thumb. The hand is held in 60 degrees of flexion and marked ulnar deviation at the corpo-radial joint to maintain the facing and the length respectively. As the plaster sets moderate pressure is applied over the distal ends of the radius and ulna so as to closely approximate these bones and thus correct the separation caused by the torn ligaments. The short arm cast permits a slight amount of motion. However, with comminuted fractures, a long arm cast is applied as rotation may cause a loss in length.

The follow up period is as important as the reduction. The fracture may tend to lose its length and facing in spite of perfect reduction. The critical period is between the seventh and tenth days. At this time soft callus has begun to form and in a few days it is extremely difficult, if not impossible, to re-manipulate the fragments. Therefore, all Colles' fractures are checked by x-ray at this time. Any loss of length, facing, or spreading is readily corrected by wedging the cast. If wedging is unsuccessful, the cast is removed, the fracture re-manipulated under a general anesthetic, and a padded cast re-applied. In cases of great initial swelling, the cast must sometimes be split its entire length. As soon as the swelling has disappeared, a new cast is re-applied and position again checked by x-ray. The cast is bivalved at five to six weeks and the wrist is again x-rayed. The amount of callus determines the future treatment. If good heavy

2-b

2-c

callus is present, home hydrotherapy is instituted. This consists of active motion of the wrist for twenty to thirty minutes three times a day in a basin of hot water. As the fingers and elbow (except in comminuted fractures) have not been immobilized, these should not be stiff. Finger, elbow, and shoulder exercise are encouraged after the second x-ray re-check—seven to ten days. This prevents any stiffening in these joints and greatly enhances the wrist motion when the wrist in turn is removed from the cast. The bivalved cast is worn for another two weeks except for gradually increasing light exercise when a final x-ray is taken. If callus is adequate, the patient is discharged. Those that heal more slowly are carried over a proportionately longer period of time before discharge, but all receive mobilization in six weeks in the form of active motion.

A fair number of patients develop Sudeck's atrophy. This is characterized by persistent stiffness,

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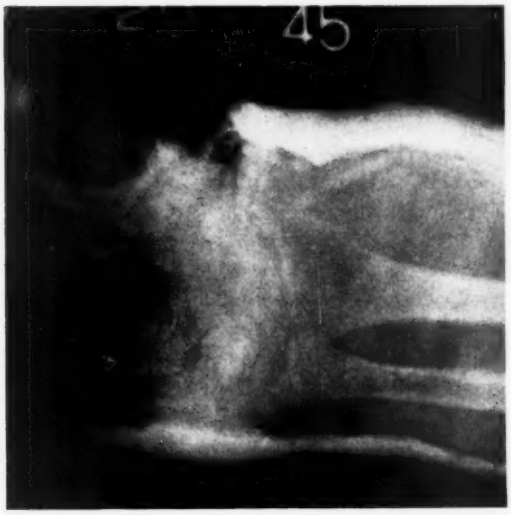
3-a

3-b

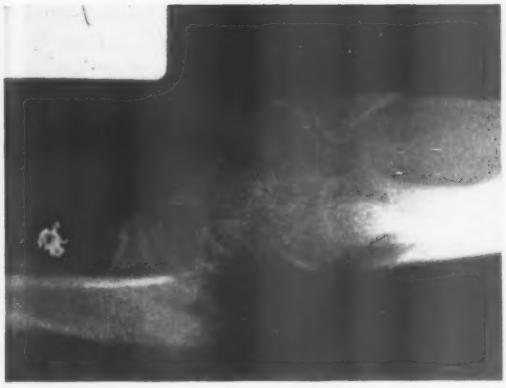
swelling, and circulatory impairment. X-rays will usually reveal a spotty atrophy in both rows of carpal bones as well as the metacarpals. These are treated by injection of the sympathetic ganglion and more recently the same effect of sympathetic releases is brought about by the use of tetra ethyl ammonium bromide. This drug is given either intravenously or intramuscularly in a 10 per cent solution (100 mg. per cc). The dose ranges from 100 mg. (1.0cc) to 500 mg. (5.0cc). Given intramuscularly the dose is 20 mg. per kilogram of body weight with the maximal dose 1.0 to 1.2 Gm. (10 to 12cc) with half the total volume in each buttock. Given intravenously a blood pressure cuff is used as a tourniquet and the patient is watched for a fall in blood pressure. Never more than 5cc is given intravenously.

A common error is to diagnose a reverse Colles' or Smith fracture as a Colles' fracture and to treat it as such. In this fracture the distal fragment of the radius is displaced in a palmar direction. Placing this fracture in a position of 60 degrees flexion of the wrist obviously increases the deformity. This fracture is usually held best with the hand in slight



3-c

3-d



4-a

cock-up position.

Improperly reduced Colles' fractures will cause injury to the flexor tendons as they pass over the sharp volar surface of the unreduced proximal fragment. This may progress from a fraying of the tendons to an actual rupture. Another tendon occasionally involved is the extensor pollicus longus. A small chip off the back of the articular margin of the radius which cuts the tendon is the cause of this complication.

In children, instead of the true Colles' fracture, one more often encounters a displacement of the radial epiphysis. Actually the epiphyseal separation is to be regarded as a fracture adjacent to the epiphyseal line and not through the epiphyseal disc. It is readily reduced using the same treatment

4-c

as in the routine Colles' but need not be immobilized as long nor in the extreme position of flexion and ulnar deviation (usual time, three weeks).

The following are a series of cases which illustrate the more common pitfalls into which the unwary bonesetter may fall.

CASE 1. J. A., 11 year old white boy fell off a

4-b

chinning bar just prior to being seen in the O. P. D., 11-13-45. Marked silver-fork deformity of wrist due to dorsal displacement of radial epiphysis resulted (Fig. 1A). Reduced under nitrous oxide anesthesia and short arm cast applied with hand in palmar flexion and ulnar deviation. Post reduction films showed good position. Patient returned eight

4-d

days later, 11-21-45. No complaints. Lateral film showed slight slipping of radial epiphysis in a palmar direction. Wrist remanipulated under general anesthetic same day and check film shows excellent position (Fig. 1B). Patient returned 12-19-45. Check film showed excellent final position. Example of juxta-epiphyseal fracture.

CASE 2. M. T., a 69 year old colored female was seen 12-22-45, four weeks after having injured her wrist. It was swollen and painful. X-rays revealed loss of facing, spreading, and slight loss of length (Fig. 2A). Placed in a volar splint with hand in ulnar deviation and palmar flexion. Seen one week

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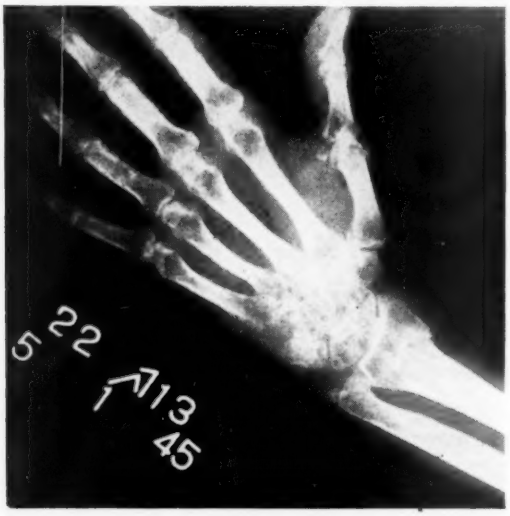
later, 12-29-45 and splint was in good condition. Returned 1-5-46. Splint removed and motion commenced. Seen 4-6-46 complaining of pain in the wrist. X-rays taken same day reveal the fracture completely healed with further shortening of the radius, loss of facing, spreading, and early signs of hypertrophic arthritis (Figs. 2B-C).

This is an example of an unrecognized, comminuted fracture of the radius. The end result is



5-a

radial shortening, loss of facing, and hypertrophic arthritis giving the patient a weak, painful wrist.

CASE 3. C. E., 48 year old white female first seen 11-20-45 with complaint of broken arm of several hours duration. X-rays same day showed a comminuted Colles' fracture (Fig. 3A). Manipulated under general anesthesia, long arm cast applied, and check films same day revealed excellent reduction (Figs. 3B-C). Patient returned one week later, 11-26-45, and check films showed good position. Returned 12-27-45, five and one half weeks after original injury when cast was removed and x-rays taken (Fig. 3D). There was loss of length and facing. Patient started on home physiotherapy, wearing bivalved cast remainder of time. Returned 1-10-46 for final check. Wrist motion is good and wrist painless. To continue home physiotherapy and avoid heavy work for one month.

Example of comminuted fracture showing how difficult it is to maintain reduction.

CASE 4. J. M., 37 year old white male injured right wrist four months before being seen. This reverse Colles', or Smith fracture, associated with a fractured ulna had been treated as a Colles' fracture by his local physician. Reduction had been attempted on three occasions with immobilization by board splints. Physical examination revealed a markedly deformed wrist with dorsal angulation of distal end of proximal fragment of radius with motion limited to 15 degrees of extension and flexion. X-rays dated 4-17-47 (Figs. 4A-B). On April 18, 1947 an open reduction was performed. The distal ends of the ulna and the shaft of the radius were resected. The distal end of the radius was then levered into better position. This was placed in a cast with the hand in dorsi-flexion and checked by x-ray 4-21-47. The position of the hand is much improved and in a far better physiological position for grasping. A final x-ray out of the cast was taken 6-2-47 (Fig. 4C-D). The functional result when seen six months later was found to be nearly normal.

This is an example of an unrecognized reverse Colles' fracture which was treated as a Colles' fracture with disastrous results.

CASE 5. F. R., a 55 year old white female injured her left wrist in a fall three and a half weeks previously resulting in a simple fracture of the distal end of the radius. This was reduced immediately and placed in a cast. The cast had to be removed in nine days due to swelling and exquisite tenderness. The hand, wrist, and distal end of the forearm were splinted but the wrist remained very painful and the skin dark in color and shiny in appearance. X-rays 5-1-45 revealed a Sudeck's atrophy (Fig. 5A). A dorsal sympathectomy, left, was performed May 4, 1945. The patient noticed immediate improvement being able to move her fingers better and there was loss of pain.

This is a good example of Sudeck's atrophy following a relatively minor injury to the wrist which was helped by a dorsal sympathectomy.

CONCLUSION

1. Colles' fractures are not as simple as they are commonly regarded.
2. The frequent complications are listed and the treatment outlined.
3. The use of tetra ethyl ammonium bromide as an agent for sympathetic release is discussed.

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MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Anti-Vivisectionists

Here they come!

Who are they?

The anti-vivisectionists—those people who are organized for the purpose of preventing the use of animals in the study of medical science.

Perhaps life is universally man's greatest concern. No wonder health and medical care seem to be so important. Yet some may fail to realize how dependent we have been, and will continue to be, on medical research. Someone has well said that "We must study life to protect life".

The National Society for Medical Research, 25 East Washington Street, Chicago 2, Illinois, is leading a nation-wide fight to preserve the freedom of scientific research in medicine, under the presidency of Dr. Anton J. Carlson. Dr. A. C. Ivy is secretary-treasurer of the organization, which publishes an excellent monthly bulletin. This Society also has posters on medical progress and medical experimentation which are available to medical or health agencies on request.

It has also been noted that "Driftwood", a Republic motion picture, dramatically portrays the benefits of animal experimentation. In addition, the July 24 issue of *The Saturday Evening Post* contains an article entitled "They Are Trifling With Your Life", by Virgil H. Moon, Professor Emeritus of Pathology at Jefferson Medical College, Philadelphia. This article tells of the sinister motivations and financial ramifications of the anti-vivisectionist movement.

The September 11 issue of the *Journal of the A.M.A.* also contains a reference to this subject.

A great deal of money and energy have been spent in a number of states in legislative fights with anti-vivisectionists. This represents a waste that we should not like to incur in Virginia, but we have no assurance that we shall avoid it. Perhaps being informed, and helping others to understand this subject, constitutes our best safeguard. This is a matter that concerns us and should be of interest to your patients.

Radio Programs

Radio stations in Martinsville, Staunton and Suffolk have recently inaugurated the "Tell Me Doctor" series, making a total of 11 stations now broadcasting these programs on health and medical care.

The latest additions are:

WMVA, Martinsville, Monday through Friday. Consult newspaper for time

WTON, Staunton, 1:57 p.m., Monday, Wednesday and Friday

WLPM, Suffolk, 4:35 p.m., Monday through Friday

A twelfth station, WPIK in Alexandria, is scheduled to broadcast the program each Tuesday at 10:05 a.m., beginning October 5.

District Council Meeting

Members of the District Council in the Second Congressional District attended a dinner meeting on the evening of Wednesday, September 8, at the Portsmouth Hotel, Portsmouth. Dr. C. Lydon Harrell, of Norfolk, Councilor for the District, presided.

The first speaker on the program was Mr. Henry S. Johnson, Director of Public Relations, whose topic was "Our Public Relations Program".

Mr. R. B. Almack, Director of the Division of Hospital Survey and Construction in the State Department of Health, told of "The Hospital Construction Program in Virginia", while Dr. George A. Duncan, of Norfolk, spoke on "Voluntary Prepayment Medical Care and Hospitalization", with special reference to conditions in Tidewater Virginia.

The Associate Editor of the *Norfolk Virginian-Pilot*, Mr. William Shands Meacham, told of the history and accomplishments of the Virginia Council on Health and Medical Care, of which he was formerly the Executive Director. He still serves on the Executive Committee of the Council.

"The Present Need for Medical Public Relations" was the topic of Dr. John T. T. Hundley, member of the District Council from the Lynchburg Academy of Medicine in the Sixth Congressional District.

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Dr. Walter B. Martin, of Norfolk, a member of the Board of Trustees of the American Medical Association, made a number of excellent summarizing observations.

In closing, Dr. M. Pierce Rucker, of Richmond, President-Elect of the Medical Society of Virginia, had several interesting comments to make.

In addition to the regular program, there was considerable informal discussion on various points pertinent to a public relations program. During this, Dr. R. M. Cox, member of the District Council from Portsmouth, expressed concern over several items and urged more definite and progressive action.

Members of the District Council who were present included Drs. W. Holmes Chapman, Suffolk; N. F. Rodman, Norfolk, and Dr. Cox. The following members of the Norfolk County Medical Society Public Relations Committee attended: Drs. M. S. Fitchett, B. R. Kennon and Robert Matthews, of Norfolk, and K. W. Howard, Portsmouth. Drs. Ira L. Hancock, Creeds, President of the Princess Anne County Medical Society, and H. W. Rogers, Norfolk, President of the Norfolk County Medical Society, were also present.

Local arrangements in Portsmouth were well handled by Drs. Cox and Howard.

Shortage of Medical Personnel

The matter of recruitment of medical personnel has been of some concern in the Department of Public Relations and among members of the profession generally in the state.

It was agreed in one of the conferences for members of the District Council six months ago that a definite plan for recruitment of nurse trainees should be tried out and participated in by physicians in that Congressional District.

A component Medical Society in another District has more recently adopted a resolution on this subject, and it is anticipated that the matter is likely to be brought before the House of Delegates of the Medical Society in October as suggestive of possible state-wide efforts in this regard.

Perhaps a few more details should be considered in the meantime by all concerned, but it is believed that these efforts are in the right direction and that they could prove valuable in the solution of a well-recognized problem—the shortage of medical personnel.

Veterans Medical Care Program

The Veterans Affairs Committee (sometimes referred to as the Review Board) held its second meeting on Friday, September 10, at the Richmond Academy of Medicine Building. This committee's chief concern is with the functioning of the Veterans Medical Care Program. Dr. Patrick H. Drewry, Jr., Medical College of Virginia, is serving as Chairman.

It was obviously the consensus of the committee that it should work as closely as possible with the Fee Schedule Committee, headed by Dr. J. M. Emmett, Clifton Forge, in consideration of references to fees that had been brought to its attention. The committee also felt that a close working relationship with the Veterans Administration could be helpful and suggested procedures to effect this.

All matters to date bearing on this subject were discussed in detail, appropriate action was taken and plans were made for any necessary future meetings.

Urology Award.

The American Urological Association offers an annual award of $1000.00 (first prize of $500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

The first prize essay will appear on the program of the forth-coming meeting of the American Urological Association, to be held at the Biltmore Hotel in Los Angeles, May 16-19, 1949.

For full particulars write the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis 3, Tennessee. Essays must be in his hands before February 15, 1949.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for August, 1948, as compared with the same month in 1947, and for the period of January through August, 1948, compared with the same period in 1947, is as follows:

	Aug. 1948	Aug. 1947	Jan.-Aug. 1948	Jan.-Aug. 1947
Typhoid and Paratyphoid	13	17	94	70
Diarrhea and Dysentery	604	551	2,760	3,625
Measles	97	112	6,063	7,439
Scarlet Fever	16	49	611	894
Diphtheria	10	11	143	156
Poliomyelitis	154	33	263	59
Meningitis	7	10	64	81
Undulant Fever	3	7	60	50
Rocky Mountain Spotted Fever	19	14	57	54
Tularemia	5	6	41	39

UNDULANT FEVER (BRUCELLOSIS)

A continued high prevalence of Undulant Fever in Virginia during 1948 warrants reviewing the present data. Approximately 5,000 cases are reported annually in the United States to health departments, and it is reliably estimated that there are actually more than 30,000 cases unreported. In Virginia the number of cases averaged 32 per year for 10 years preceding 1946. Since that time this number has doubled. For the first nine months of 1948 there have been already reported 65 cases.

The State Health Department, together with the State Department of Agriculture, has been working on efficient handling of the situation as infection in Virginia is largely due to Brucella Abortus contracted directly or indirectly from cattle infected with Bang's Disease, and or, B. Suis of hogs. Veterinarians generally recommend vaccination of calves with strain 19 of the vaccine.

In human infections reported in Virginia, ages have varied from 4½ years to 90 years, the mean age being 40.8. Suggested possible source of infection is in the handling and slaughtering of infected cattle and hogs, as well as the use of unpasteurized milk and milk products.

In making the diagnosis, the physician finds clinically an irregular recurring fever and symptoms frequently which may resemble typhoid, influenza, tuberculosis, malaria or tularemia. A specimen of blood in a definite case will show positive agglutination during the 2nd or 3rd week or later. Also in a definite case the titre fluctuates with the disease and goes from 1-80 to 1-200, or even as high as 1-4,000. A negative agglutination does not rule out infection especially if blood is taken during the 1st or early part of the 2nd week.

The treatment accepted consists of combination of the sulpha drugs and streptomycin-vaccine has been used. Bed rest and supportive treatment during febrile period is indicated.

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3. Steinberg, C. L.: Brucellosis as a Case of Sacroiliac Arthritis, *J.A.M.A.* **138**:15, September 4, 1948.

BOOK ANNOUNCEMENTS

Essentials of Pathology. By LAWRENCE W. SMITH, M.D., F.C.A.P., Formerly professor of pathology, Temple University School of Medicine; Formerly assistant professor of pathology, Harvard Medical College, etc. and EDWIN S. GAULT, M.D., F.C.A.P., Associate professor of pathology and bacteriology, Temple University School of Medicine. Third Edition. The Blakiston Company, Philadelphia. 1948. 764 pages. 740 illustrations. Cloth. Price $12.00.

Preoperative and Postoperative Care of Surgical Patients. By HUGH C. ILGENFRITZ, A.B., M.D., F.A.C.S., Formerly assistant professor of surgery, Louisiana State University School of Medicine; Visiting surgeon, Charity Hospital of Louisiana at New Orleans, with Foreword by URBAN MAES, M.D., D.Sc., F.A.C.S., Emeritus professor of surgery, Louisiana State University School of Medicine; etc. St. Louis, The C. V. Mosby Company. 1948. 898 pages. 110 illustrations. Cloth. Price $10.00

Advances in Pediatrics. By S. Z. LEVINE, Cornell University; ALLAN M. BUTLER, Harvard Medical School; L. EMMETT HOLT, JR., New York University; A. ASHLEY WEECH, University of Cincinnati. Volume III. Interscience Publishers, Inc., New York. 1948. ix-363 pages. Cloth. Price $7.50.

Practice of Allergy. By WARREN T. VAUGHAN, M.D., Richmond, Virginia. Revised by J. HARVEY BLACK, M.D. Dallas Texas. Second Edition. St. Louis, The C. V. Mosby Company. 1948. 1132 pages. 333 illustrations. Cloth. Price $15.00

The Battle of the Conscience. A Psychiatric Study of the Inner Working of the Conscience. By EDMUND BERGLER, M.D. Washington Institute of Medicine, Washington, D. C. 1948. x-296 pages. Cloth. Price $3.75.

This book is a psychiatric study of the inner working of the conscience. It is a psychoanalytical approach. In the first chapter, the author dwells on the origin of the pre-stages of conscience. He refers to continence, restraint of the child from biting and tearing of the mother's breast or breast equivalents, as well as other rules forced upon the child in the first two years and how later they become a specific part of his educational program. Guilt feelings are imposed by reference to unavoidable masturbation, enuresis. The author gives as the first reason for abstaining from aggressive acts prohibited by the educator is fear of loss of love or fear of punishment, secondarily the educators are internalized and thus the pre-stages of inner conscience are built up.

In his chapter on normal and neurotic inner feeling of guilt, he dwells on the unconscious part of the personality with special reference to the trial, Id, super ego and the unconscious ego. His explanation of the mechanisms involved in the normal and the neurotic aspects is well expressed. He refers to unconscious wishes and defense mechanisms stemming from early childhood. The author gives practical examples to explain his points.

In later chapters in his book, he explains the mechanism of identification, sublimation and rationalization. He explains depression and suicidal tendencies. One chapter deals mainly with torturing dreams and insomnia caused by guilt.

The author sums up his book referring to the basic elements of conscience as being indestructible. "Conscience is a dynamic force which under specific conditions may lead humanity to a better and safer world in which to live. Optimists assure us that the battle of the conscience will be won".

This book is recommended mainly to get the psychoanalytic approach in explaining the unconscious conscience; to become acquainted with unconscious mechanisms present in the dynamics of personality behavior.

I feel that it is good reading for psychiatrists, practitioners, medical students who have entered the clinical stage of their education and for nurses who are especially interested in psychiatry.

V. E. L.

American Medical Research Past and Present. RICHARD H. SHRYOCK, Ph.D., Professor of History and Lecturer in Medical History, University of Pennsylvania; Acting Director, American Council of Learned Societies. New York, The Commonwealth Fund, 1947. xv-350 pages. Cloth. Price $2.50.

In this scholarly monograph, Dr. Shryock has traced for the first time the story of the development of medical research in the United States. As a distinguished general historian, the author commands the techniques of the professional historian. Moreover, with a sympathetic interest in science as it has affected the course of history, Dr. Shryock has been able to give a new and unbiased appraisal of the forces which have shaped medical and scientific thought, particularly the impact of major contemporary political, social and economic events.

The author traces his subject from the British, French and German influence on American medical research, through the emergence of American medicine to a level of cultural independence and on to the present and future problems of medical research on the vast national scale now necessary. The reader will find here valuable discussion of the role of medical research in our changing social order and the means by which it can be supported and fostered. In view of the vital significance of basic medical research as a part of the national resource, these problems and their solution are of utmost importance.

This monograph is produced under the auspices of the Committee on Medicine and the Changing Order of the New York Academy of Medicine.

E. C. H.

Presidents of the Medical Society of Virginia

PRESIDENT	YEAR OF MEETING
*Dr. James McClurg, Richmond	1821
*Dr. William Foushee, Richmond	1822
*Dr. William Foushee, Richmond	1823
*Dr. James Henderson, Richmond	1824
Meetings Discontinued.	
*Dr. Robert William Haxall, Richmond	1841
*Dr. Robert William Haxall, Richmond	1842
*Dr. Frederick Marx, Richmond	1843
*Dr. Thomas Nelson, Richmond	1844
*Dr. William A. Patteson, Richmond	1845
*Dr. William A. Patteson, Richmond	1846
*Dr. John A. Cunningham, Richmond	1847
*Dr. William A. Patteson, Richmond	1848
	1849
*Dr. Robert William Haxall, Richmond	1850
*Dr. Beverley R. Wellford, Fredericksburg	1851
*Dr. James Beale, Richmond	1852
*Dr. Thomas P. Atkinson, Danville	1853
*Dr. Carter P. Johnson, Richmond	1854
*Dr. H. C. Worsham, Dinwiddie	1855
*Dr. H. C. Worsham, Dinwiddie	1856
*Dr. James Bolton, Richmond	1857
*Dr. Levin S. Joynes, Richmond	1858
Meetings Discontinued	
*Dr. R. S. Payne, Lynchburg	1870
*Dr. R. S. Payne, Lynchburg	1871
*Dr. A. M. Fauntleroy, Staunton	1872
*Dr. Harvey Black, Blacksburg	1873
*Dr. A. G. Tebault, London Bridge	1874
*Dr. S. C. Gleaves, Wytheville	1875
*Dr. F. D. Cunningham, Richmond	1876
*Dr. J. L. Cabell, University	1877
*Dr. J. H. Claiborne, Petersburg	1878
*Dr. L. S. Joynes, Richmond	1879
*Dr. Henry Latham, Lynchburg	1880
*Dr. Hunter McGuire, Richmond	1881
*Dr. G. W. Semple, Hampton	1882
*Dr. W. D. Cooper, Morrisville	1883
*Dr. J. E. Chancellor, Charlottesville	1884
*Dr. S. K. Jackson, Norfolk	1885
*Dr. Rawley W. Martin, Chatham	1886
*Dr. Bedford Brown, Alexandria	1887
*Dr. Benjamin Blackford, Lynchburg	1888
*Dr. E. W. Row, Orange C. H.	1889
*Dr. Oscar Wiley, Salem	1890
*Dr. W. W. Parker, Richmond	1891
*Dr. H. Grey Latham, Lynchburg	1892
*Dr. Herbert M. Nash, Norfolk	1893
*Dr. Wm. P. McGuire, Winchester	1894
*Dr. Robt. J. Preston, Abingdon	1895
*Dr. Wm. L. Robinson, Danville	1896
*Dr. Geo. Ben Johnston, Richmond	1897
*Dr. Lewis E. Harvie, Danville	1898
*Dr. Jacob Michaux, Richmond	1899
*Dr. Hugh T. Nelson, Charlottesville	1900
*Dr. J. R. Gildersleeve, Tazewell	1901
*Dr. R. S. Martin, Stuart	1902
*Dr. J. N. Upshur, Richmond	1903
*Dr. Joseph A. Gale, Roanoke	1904
*Dr. Wm. S. Christian, Urbanna	1905
Dr. Lomax Gwathmey, Norfolk	1906
*Dr. Paul B. Barringer, Charlottesville	1907
*Dr. Wm. F. Drewry, Petersburg	1908
Dr. Stuart McGuire, Richmond	1909
*Dr. E. T. Brady, Abingdon	1910
*Dr. O. C. Wright, Jarratt	1911
*Dr. Hugh M. Taylor, Richmond	1912
*Dr. Southgate Leigh, Norfolk	1913
*Dr. Stephen Harnsberger, Catlett	1914
*Dr. Samuel Lile, Lynchburg	1915
*Dr. Joseph A. White, Richmond	1916
*Dr. Geo. A. Stover, South Boston	1917
*Dr. Ennion G. Williams, Richmond	1918†
*Dr. Ennion G. Williams, Richmond	1919
*Dr. Paulus A. Irving, Farmville	1920
*Dr. Alfred L. Gray, Richmond	1921
*Dr. E. C. S. Taliaferro, Norfolk	1922
*Dr. John Staige Davis, University	1923
*Dr. W. W. Chaffin, Pulaski	1924
Dr. Hunter H. McGuire, Winchester	1925
Dr. W. L. Harris, Norfolk	1926
*Dr. J. Shelton Horsley, Richmond	1927
*Dr. J. W. Preston, Roanoke	1928
Dr. J. Bolling Jones, Petersburg	1929
*Dr. Charles R. Grandy, Norfolk	1930
*Dr. J. Allison Hodges, Richmond	1931
Dr. I. C. Harrison, Danville	1932
*Dr. J. C. Flippin, University	1933
Dr. R. D. Bates, Newtown	1934
*Dr. F. H. Smith, Abingdon	1935
Dr. P. St. L. Moncure, Norfolk	1936
Dr. J. M. Hutcheson, Richmond	1937
*Dr. G. F. Simpson, Purcellville	1938
Dr. A. F. Robertson, Jr., Staunton	1939
Dr. H. H. Trout, Roanoke	1940
Dr. W. B. Martin, Norfolk	1941
Dr. Roshier W. Miller, Richmond	1942
Dr. J. M. Emmett, Clifton Forge	1943
*Dr. C. B. Bowyer, Stonega	1944
Dr. H. B. Mulholland, Charlottesville	1945
*Dr. Julian L. Rawls, Norfolk	1946
Dr. W. L. Powell, Roanoke	1947
Dr. Guy R. Fisher, Staunton	1948

*Deceased.

†Owing to influenza epidemic during World War I, the council met in 1918, and Dr. Williams was continued as President.

EDITORIALS

Community Fund Agencies

SUMMER is over, the children are back in school and the season for Community Fund Drives and Thanksgiving is at hand. The Richmond fund raising is October 12-27. Other funds and dates are:

Norfolk, October 11-22	Newport News, October
Roanoke, October 11-22	Lynchburg, October 18-23
Alexandria, October 7-November 4	Arlington, October 7-November 6
Winchester, October 8-22	Martinsville, October
Blacksburg, October 11-22	Charlottesville, October 15-30
Danville, October 7-15	Fairfax County, September 30
Hopewell, October	Petersburg, October 11-15

The Richmond Fund is celebrating its 25th anniversary.

Recently we had the privilege of going on a tour of inspection of two of the Agencies in the Richmond Community Fund: The Richmond Home for Boys and the Virginia Home for Incurables. The one supplies boys from disrupted homes with a home until they can make a home for themselves in the world. The other, as its name implies, supplies a home for the hopelessly afflicted until they die. We were surprised at the happy and cheerful atmosphere of both institutions. Naturally we were interested in the kind of medical attention the inmates of these institutions receive. The Richmond Home for Boys has a well equipped infirmary, and when hospital treatment is necessary the boys are sent to the Sheltering Arms Hospital. Every boy is given a routine physical examination once a year and recommendations, such as, T & A operations, circumcisions, hernia operations, eye examinations, dental work, skin infections, poor posture are attended to promptly. The medical staff is an impressive one. Dr. Oscar Hite is chairman. The other members are: Drs. Thomas E. Hughes, John C. Tyree, J. E. Warinner, R. D. Butterworth, J. B. Dalton, Webster P. Barnes, Donald S. Daniel, Allen Pepple, Richard Fowlkes, Rudolph C. Thomason, Luther C. Brawner and Edgar C. Childrey, Jr.

At the Home for Incurables, the medical staff is equally outstanding. Dr. Henry Decker is chief of staff and Dr. Morris Pinckney the head of the medical staff. On active call are Drs. Samuel W. Budd, Jr., Robley Bates, Jr., James O. Burke, William Higgins, Jr., Gilman Tyler, John Lynch and Henry Decker. Dr. Finley Gayle is the psychiatrist, Dr. James T. Tucker the orthopedist, Dr. Thomas Murrell the dermatologist, Dr. Fred Hodges the roentgenologist, Drs. F. H. Lee and H. St. George Tucker, Jr., the ear, nose and throat specialists. Drs. Douglas Chapman, Dewey Davis, Charles Nelson and Frank Pole are consultants.

Other agencies make use of physicians' time and skill. Drs. Rex Blankinship and Elam Toone are of the Board of the Family Service Society and give their professional advice. Dr. William Bickers is obstetrician and Dr. Emily Gardner the pediatrician for the Evangeline Booth Home and Hospital. Drs. George White, Everett White and Felix Brown give their services to the Friends Association for Colored Children. Dr. Joseph T. Byrne looked after the boys attending Camp Shawondassee of the Boy Scouts of America. The following served in the cancer control clinics: Drs. Herbert Lee, Edward S. Ray, R. H. Hoge, Everett Evans, M. J. Hoover, Richard Cecil, I. A. Bigger, A. B. Gathright, Jr., B. W. Rawles, Jr., DeWitt Daughtry, G. Watson James, Reuben Simms, St. George Tucker, William D. Suggs, Philip Cole-

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man, J. O. Burke, Spotswood Robins, Edwin Rucker, Albert Hill, Jerome Shapiro, J. Robert Massie and Kenneth Cherry.

It is quite evident that the medical profession is giving the best it has to the Community Fund Agencies. The doctors not only give their professional services, but get out and work in the campaign for funds. We have not checked the other Virginia cities, but we are confident the same is true there. No doubt the public thinks that the doctors are paid for these medical and surgical services. We would suggest some such term as "honorary" be prefixed to their titles, such as honorary chief of staff, honorary attending staff, honorary consultant, etc. The public should know such things.

Balneology

ROMAN baths connote leisure, luxury, licentiousness, and even lasciviousness all combined in a setting of beautiful gardens and sumptuous architecture. Neither an individual nor a nation that has to struggle for existence has need of a public bath. When however they have leisure and have accumulated a little money, there is a place for balneology. The Romans were great sanitary engineers and they built roads, aqueducts and baths wherever they conquered. The Roman remains at Bath are the most extensive in England. However Bath and the other less well known resorts did not become popular until the sixteenth century. The search, pretended or real, for health at that time, stimulated physicians to action and after 1560 they strove to make balneotherapy as popular in England as it had been for a long time on the continent. Mullett has collected 470 references to the "waters" and of these 234 were books, most of which went through more than one edition.

A list of diseases that are benefited includes about all the chronic diseases the human flesh is heir to. Turner, one of the early writers, was of the belief that waters partaking of iron and sulphur and being cool and dry were proper antidotes for all kidney and bladder ailments, rheumatism, the short winded, and "cold phlegmatic men that would gladly have children and have none". Where iron constituted the chief mineral, the waters cured all manner of itch, numbness, diseases of the joints, stiffness of the sinews, dizziness of the head, and gnawings of the stomach. Ulcers, the stone, melancholy, weakness of the limbs, swellings, worms, scurvy and the falling sickness were all benefited. One spring in Henry First's time had a reputation for curing leprosy. An anonymous correspondent of the Royal Society described several German springs, one of which was good for epilepsy, but was so strong that birds died in convulsions after drinking from it. Borlase, who died in 1682, added women's diseases and gonorrhoea to the list. Robert Boyle (1627-91) inquired into the virtues of the sea especially against hydrophobia. Sir William Beeston described a hot bath in Jamaica which cured stomach disorders, the pox and ulcers. Sir John Floyer wrote the *History of Cold Bathing* which went through six editions. Cold bathing, he said, was fitting for Englishmen because in a cold climate it meant less change from the bath to the environment. He quoted Galen and John Locke to the effect that it was good for corns. However, asthma and "decayed viscera" required other treatment. The celebrated George Cheyne, in his treatise on the gout, said that the waters of Bath illustrated the wisdom of Providence in furnishing an antidote to almost all the chronical distempers of an English constitution and climate which chiefly resulted from errors of diet, rankness of soil, richness of provisions, living so much on meat, inconstancy of the weather and indulging in sedentary amusements or speculative studies. They benefited gouty persons because they contained

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sulphur and other curative elements. Their warmth just suited the wants of nature, being a little warmer than the body, encouraging the circulation by relaxing the stiff fibres. Their taste was agreeable. They were good for jaundice, scurvy, stone, hysteria, melancholy, rheumatism, digestive disorders, morning sickness, barrenness and difficult menstruation.

For best results a certain regimen should be followed. A person should start with drinking 3 pints, gradually increasing to 8 or 9. He should drink slowly, walking a little between drinks. He should not stand in the sun nor sit on the cold ground. Finally while taking the waters and for a month or two afterwards the patient should be temperate, even spare, in his diet. While bathing the patient should keep his head covered, "be quiet from swimming, or much motion which may offend the head by sending up vapours thither," dry his body well and rest in bed afterward for an hour. The best time for bathing was an hour after sun-up and the best season was summer. A person should stay no longer than an hour in a hot bath or two hours in a temperate one. Many writers stressed the importance of being under the care of a physician. A purge was advantageous before starting the treatment. Some recommended a "gentle vomit" in addition. To relieve the dreadful monotony of the cure there was the theater and gambling. Count de Grammont was impressed with the excellent appurtenances and entertainment of every sort, "high stakes and love making in abundance". It attracted all sorts of persons. *Peter Porcupine* defined a watering resort as a place to which East India plunderers, West India floggers, English tax-gorgers, together with gluttons, drunkards and debauchees of all descriptions, female as well as male, resort, at the suggestion of silently laughing quacks, in the hope of getting rid of the bodily consequences of their manifold sins and iniquities . . . gamesters, pick-pockets, and harlots, young wife hunters in search of rich and ugly and old women, and young husband-hunters in search of rich and wrinkled and half rotten men. Long before the time of *Peter Porcupine* problems of a social nature followed the influx of divers persons, since mixed bathing in the nude survived until 1621. Tobias Smollett (1721-71) who praised the "waters" both of Bath and the sea, deplored promiscuous bathing, holiday bath chairs, the lack of guides, and called for proper fees, a convenient number of chairs and quiet.

One phase of the spring business related to bottled water that was shipped far and wide for home consumption. When the relationship of uric acid to gout was discovered and it was found that uric acid *in vitro* was soluble in water containing salts of lithium, great numbers of lithia waters appeared on the market. It was years before the fallacy that lithia water dissolved uric acid *in vivo*, was exploded. Today one rarely hears of lithia water.

Such extravagant claims made for the waters, and the many freaks who frequent the resorts, have made balneology more or less a laughing stock. The situation seems made to order for cartoonists and satirists, and yet the baths have stood the test of time. Year in and year out, in flush times and bad, a host of chronic sufferers have gotten relief. They are not the folk that make the front pages of the newspapers. There must be some virtue in the regimen or these people would not keep coming.

This question is especially interesting to Virginians for two reasons: (1) The Virginia Springs area in the Alleghany Mountains contain a great variety of well known springs; (2) At the Medical College of Virginia is one of the centers of the Baruch Foundation for the study of Physiotherapy. Before the war, meaning 1861-65, this area was patronized by wealthy people from all over the South and the Atlantic Seaboard. Presidents and statesmen were frequent guests. Although the patrons came by stage coach or private carriages, the popular resorts like the White

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Sulphur Springs turned away great numbers every season. Times have changed and most of these famous resorts have closed up. The old Sweet is an old folk home. The Salt Sulphur looks like a ghost mining town and the Sweet Chalybeate like the habitation of ghosts. Only the Greenbrier and the Homestead have survived and they have become resorts comparable to the best European spas. Each is equipped for various forms of hydrotherapy and physiotherapy, and both have excellent physicians in charge. Places like these should become more and more important, especially since statistics show that the population is rapidly getting older.

James King Hall, A.B., M.D., LL.D., 1875-1948

IN the death of Dr. James K. Hall on September 10th, the *Monthly* lost its most helpful reader. Apparently he read everything in the journal for he frequently wrote very welcome letters to the editor upon the greatest variety of subjects. Sometimes there was a word of praise, and sometimes there was a tactful criticism. Sometimes he called our attention to some error of omission and sometimes there was a suggestion as to what we should do. Frequently it was a little historical or biographical note in reference to some medical man or some hero or heroine of the Confederacy. To those who knew Dr. Hall there is no need to explain there was never anything at which one could take offense. His criticisms were couched in such delightful language that the editor felt complimented that Dr. Hall had noticed his shortcomings.

Dr. Hall was born in Piedmont, North Carolina, September 28, 1875, the son of Dr. Eugenius A. Hall and Amanda McCullough (Howard) Hall. Dr. Eugenius Hall was a well known country doctor of North Carolina. James K. Hall earned his A.B. degree at the University of North Carolina in 1901 and in 1935 his *Alma Mater* conferred upon him the honorary degree of LL.D. He graduated in Medicine at the Jefferson Medical College in 1904. After serving as interne in the Philadelphia Polyclinic Hospital, he became assistant physician to the State Hospital in Morganton, N. C. In 1911 he was one of the founders of the Westbrook Sanatorium, and since that date he has lived in and been a part of Richmond. He has taken an active part in the medical and political affairs of his adopted state, but he remained throughout a loyal son of North Carolina. He maintained his membership in the North Carolina Medical Society and was an associate editor of *Southern Medicine and Surgery* (Charlotte).

He was a pioneer in modern psychiatry and did much to advance his specialty in the South. Dr. Hall was a member of the National Committee on Mental Hygiene, the American Psychiatric Association, (president in 1941-42), Association of Private Psychiatric Hospitals (president in 1940-41), the American Medical Association, the Medical Society of Virginia (vice-president 1933-34), Richmond Academy of Medicine (president 1922), Tri-State Medical Association of Virginia and the Carolinas (president 1928-29), Southern Psychiatric Association (president 1942), American Association on Mental Deficiency, the American College of Physicians, the American Academy of Political and Social Science, the American Association for the Advancement of Science, and the Virginia Academy of Science. He was associate editor of *Diseases of the Nervous System*. For several years he was a member of the State Hospital Board of Virginia and was chairman of the Governor's Board on Criminal Mental Hygiene. He was a Phi Beta Kappa and a member of the Commonwealth Club.

A recounting of his various societies and honors shows Dr. Hall's widespread in-

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terests and activities, but indicates only inadequately his real worth and gives no indication whatever of his whimsical humor or his delightful and charming personality. To realize that, one had only to serve on some committee with him. At the State Society meetings he and the late Dr. Lowndes Peple always roomed together. Both were master recounters and no one knows all the stories these two concocted at such times. At the first meeting over which we presided as president of the Richmond Academy, Dr. Peple had a paper on uterine hemorrhage. We had promised the Academy that the meetings would begin and end on time and that the essayists would be held to the time limit set by the by-laws. Dr. Peple began by explaining that his paper had been prepared for the state meeting, but that the "presiding elder" sat with a watch in one hand and a gavel in the other and called out the essayists so fiercely that he lost his nerve and did not present his paper. The present "presiding elder", he said, was a kindly man, who, he felt sure, would allow him to complete his presentation. When he had finished reading his paper, Dr. Hall got up to discuss it. He began by describing the Battle of Seven Pines in great detail. When he got to the second day he told of a group of Union officers, one of whom handed his field glasses to a nearby soldier and asked him if he wanted to see General Lee, the new Commander-in-Chief of the Confederate Army. That soldier was Jack DaCosta, Dr. Hall said, "and it was he who first told me about radium."

In 1912 Dr. Hall married the former Miss Laura Witherspoon Ervin of Morganton, N. C. He is survived by his wife and their three sons, James King Hall, Jr., Dorman Thompson Hall and Samuel Ervin Hall.

SOCIETIES

Virginia State Board of Medical Examiners.

At the meeting of the Board in June 1948, the following were granted licenses by examination to practice in Virginia:

Name	Address
Dr. Norman N. Adler	Brooklyn, N. Y.
Dr. Robert Dea Ailsworth, Jr.	Deltaville.
Dr. Wilbur Franklin Amonette, III	Radford
Dr. Dan Norman Anderson	Richmond
Dr. Harry Paul Austin	Charlottesville
Dr. Benjamin Philo Baker	Roanoke
Dr. Guy Joseph Barrow	Richmond
Dr. Wm. Phillips Bass	Charlottesville
Dr. Joseph Wolfe Bear, Jr.	Roanoke
Dr. Robert Wright Bedinger	Madison
Dr. Doris Ada Berlin	Richmond
Dr. Elbert Lowell Berry	Charleston, W. Va.
Dr. Arthur King Black	Birmingham, Ala.
Dr. Russell Eldridge Blankinship, Jr.	Lynchburg
Dr. Randolph Graham Bradshaw	Charlottesville
Dr. Ralph Brown (C.)	Charlottesville
Dr. Collinson P. E. Burgwyn	Petersburg
Dr. Quinter M. Burnett	Arlington
Dr. Charles E. Butterworth, Jr.	Charlottesville
Dr. Noland M. Canter	Salem
Dr. Elizabeth Rowe Caro	Richmond
Dr. Kathleen Strickland Cawthon	Charlottesville
Dr. Phil Lattimer Chapman	Richmond
Dr. Malcolm Smith Chase	Salt Lake City, Utah
Dr. Paul Lowell Chodosh	Charlottesville
Dr. Ernest Tinsley Cobb	Ronceverte, W. Va.
Dr. Vernon L. Cofer, Jr.	Norfolk
Dr. Lee Roy Minor Conn	Blacksville, W. Va.
Dr. William B. Crawford, Jr.	Charlottesville
Dr. William Bryant Crenshaw	Rochester, Minn.
Dr. Douglas H. Crockett	Bluefield
Dr. Joseph McDonald Damron	Richmond
Dr. Edward Garland Davis, Jr.	Richmond
Dr. Charles William Dennison	Richmond
Dr. Conley Lee Edwards, Jr.	Crewe
Dr. Roy Alvin Edwards, Jr.	Richmond
Dr. George F. Elsasser, Jr.	Portsmouth
Dr. Warren Cavill Evans	Norfolk
Dr. Leonard Oswell Fears, Jr.	Lynchburg
Dr. Frank S. Flanary	Augusta, Ga. (Dryden, Va.)
Dr. J. Raymond Freeman	Richmond
Dr. Edward Watts Gamble, III	Boston, Mass.
Dr. Rufus Solomon Gardner, Jr.	Richmond
Dr. Lucy Goode Garnett	Charlottesville
Dr. Genevieve Marston Garrett	Morgantown, W. Va.
Dr. Edwin Wayne Gilley	Gate City
Dr. James Stephen Golden, Jr.	Charlottesville
Dr. John Newton Gordon	San Antonio, Texas
Dr. Erza Goyings, Jr.	Richmond

Name	Address
Dr. Calvin Ellis Greene,	Norfolk
Dr. Charles George Guttas,	Va. Beach
Dr. Edward Blair Guy,	Detroit, Mich.
Dr. Andrew Wentworth Hargroves, Jr.,	Winston-Salem, N. C.
Dr. John Quackenbush Hatten,	Hampton
Dr. Elliott Clarke Haley,	Charlottesville
Dr. Glenn Claire Hall, Jr.,	Pulaski
Dr. William Benjamin Hopkins, Jr.,	Richmond
Dr. Leonard Preston Hudnall,	Pratt, W. Va.
Dr. William Robert Irby,	Blackstone
Dr. Robert Wheary Irvin, Jr.,	Richmond
Dr. John Martin Johnson, Jr.,	Appalachia
Dr. Samuel Wharton Johnson, Jr.,	Norfolk
Dr. Charles Daniel Jordan,	Greenville, N. C.
Dr. Samuel Benjamin Judy,	Richmond
Dr. John Jackson Kelly, III,	Richmond
Dr. Robert Gillis Kindred,	Charlottesville
Dr. Richard Horace Kirkland,	Richmond
Dr. William Irvin Knight, Jr.,	Richmond
Dr. Carl Harrian Laestar,	Baltimore, Md.
Dr. Nancy Irene Pendleton Law,	Richmond
Dr. William McConnell Law,	Roanoke
Dr. Thomas Stacy Lloyd, Jr.,	Richmond
Dr. Harry Glenn Lockard, Jr.,	Richmond
Dr. Alvin Penrose Long, Jr.,	Richmond
Dr. William Boyd Looney,	Richmond
Dr. Natalie Inge Lum,	Richmond
Dr. Frederic Maccabe, Jr.,	Baltimore, Md.
Dr. Lyle Beuhring McGinnis,	Huntington, W. Va.
Dr. Charles Elford McKay, Jr.,	Charlottesville
Dr. Ewing William McPherson,	Richmond
Dr. Charles Taylor Marrow, III,	Hopewell
Dr. Arthur Friffin Meakin,	Norfolk
Dr. John A. Moore,	Hampden-Sidney
Dr. Merwin Blanchard Moore, Jr.,	Charlottesville
Dr. Michael Judson Moore,	Killarney, W. Va.
Dr. Charles William Moorefield,	Nathalie
Dr. William C. Morgan, Jr.,	Indianapolis, Ind.
Dr. Robert William Moseley,	Radford
Dr. Thomas Henry Moseley,	Ebony
Dr. David Walker Mullins,	Richmond
Dr. Jack Francis Murray,	Milwaukee, Wis.
Dr. Beulah Mae Musgrove,	Charlottesville
Dr. Kenwyn Gordon Nelson,	Scarsdale, N. Y.
Dr. William Albert Niermann,	Baltimore, Md.
Dr. Wallace Clay Nunley,	Charlottesville
Dr. Samuel Poindexter Oast,	Portsmouth
Dr. John Atkinson Owen, Jr.,	South Boston
Dr. Charles Council Parker,	Richmond
Dr. William Henry Pate,	Richmond
Dr. Richard Quentin Penick,	Richmond
Dr. Powell Leon Perkins,	Charlottesville
Dr. John Leak Pitts, Jr.,	Fredericksburg
Dr. James Nicholas Psimas,	Charlottesville
Dr. William Ferguson Reid,	Washington, D. C.
Dr. Eric Reiss,	New York, N. Y.
Dr. Robert Earl Richard,	Morgantown, W. Va.
Dr. Walther Riese,	Richmond
Dr. Lucien Wood Roberts, Jr.,	Richmond
Dr. Sarah Elizabeth Roberts,	Charlottesville
Dr. James Beall Rodgers,	Martinsburg, W. Va.
Dr. David Ross Rogers,	Portsmouth
Dr. Henry Page Royster,	Richmond
Dr. Frank McCutchan Ryburn, Jr.,	S. Charleston, W. Va.
Dr. William Hampden Sage, III,	Norfolk
Dr. Thomas Archer Saunders,	Richmond
Dr. Walter Haines Smartt,	Lookout Mountain, Tenn.
Dr. David Hamilton Smith,	Richmond
Dr. Marshall Jerome Snapp,	Charlottesville
Dr. Charles Mac Stanfill,	Alexandria
Dr. Clyde Vaughan Stanley, Jr.,	Charlottesville
Dr. John Lambdin Whaley,	Richmond
Dr. William Harman Whitemore, Jr.,	Richmond
Dr. John Cecil Wilkinson,	Hillsville
Dr. Ann Hardy Williams,	Richmond
Dr. Charles Lee Williams,	Richmond
Dr. Robert K. Williams,	Baltimore, Md.

APPLICANTS GRANTED LICENSE THROUGH ENDORSEMENT

Dr. Lloyd Campbell Agnew,	Washington, D. C.
Dr. James Francis Ambury,	Arlington
Dr. Richard Dabney Anderson,	Albemarle County
Dr. Harry Clark Bates, Jr.,	Falls Church
Dr. Samuel M. Becker,	Washington, D. C.
Dr. Orin Watts Booth,	Newport News
Dr. Phillips Respess Bryan,	Lynchburg
Dr. Robert C. Burnham,	Washington, D. C.
Dr. Joseph D. Casolaro,	Falls Church
Dr. Frank Samuel Caprio,	Falls Church
Dr. Ervin Newton Chapman,	Washington, D. C.
Dr. Louis A. Cibelli,	Roanoke
Dr. Hugh Gambel Clark,	Fairlington
Dr. William Duvall Claudy,	Arlington
Dr. Fred C. Collier,	Stuart's Draft
Dr. David B. Corcoran,	Suffolk
Dr. William Allaire Dashiell,	Beverly Hills, Calif.
Dr. James Lyle Dellinger,	Warrenton
Dr. George Donabedian,	Cape Charles
Dr. Cromwell Cornelius Douglas (Col.),	Norfolk
Dr. Clarence E. Dungan,	Wellsville, N. Y.
Dr. Albert M. Edmonds,	Richmond
Dr. John Robert Egan,	Arlington
Dr. Paul Taber Forth,	Roanoke
Dr. Frank E. Gibson, Jr.,	Arlington
Dr. Fleetus Lee Gobble, Jr.,	Alexandria
Dr. Stanley Z. Goldberg,	Norfolk
Dr. Lawrence Elliott Gordon, Jr.,	Marion
Dr. Thomas Eugene Haggerty,	Arlington
Dr. Herbert Whitley Harvey (Col.),	Danville
Dr. Dean Maeser Hayes,	Washington, D. C.
Dr. Herbert Dale Hebel,	University
Dr. Roger Frederick Hisey,	Spray, N. C.
Dr. Camp Stanley Huntington,	Washington, D. C.
Dr. Anson R. Hyde,	Arlington

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Name	Address
Dr. Philip E. Jones,	Alexandria
Dr. William Harding Kneedler,	Charoltte, N. C.
Dr. Wieman Kretz,	Newport News
Dr. Walter Jerome Lee,	Richmond
Dr. Louisa Chandler Littleton,	Arlington
Dr. Thomas Alfred McGavin,	Arlington
Dr. Jay McLean,	Arlington
Dr. George V. Martin,	Washington, D. C.
Dr. James H. Masterson,	Arlington
Dr. George S. Maxwell,	Roanoke
Dr. Kay Norman Ostergard,	Arlington
Dr. Richard E. Palmer,	Arlington
Dr. Manson Bowers Pettit,	Washington, D. C.
Dr. John Byron Poore,	Roanoke
Dr. David C. Prickett,	Buchanan County
Dr. Isadore Rod,	Washington, D. C.
Dr. Julius Schreiber,	Washington, D. C.
Dr. Charles F. Stiegler,	Washington, D. C.
Dr. William Thornton Spence,	Washington, D. C.
Dr. Earle E. Sullivan,	Covington
Dr. William Raymond Thomas,	Washington, D. C.
Dr. Joe Milton VanHoy,	Arlington
Dr. William David Varner,	Franklin
Dr. Guy Zimmerman, Jr.,	Stonega
Dr. William Harold Zimmerman,	Keokee

Wise County Medical Society.

Members of this society were entertained with a steak dinner on the evening of August the 18th, at Norton, the hosts being Drs. J. H. Hagy, S. H. Rivers, J. D. Culbertson and T. J. Tudor. Thirty-two doctors heard Dr. Harlis O. Bolling of Kingsport, Tenn., speak on "Hopeful Aspects of Cardiovascular Disease". This was followed by an interesting question and answer period which lasted for an hour.

Resolution was passed to ask the delegate to the state convention in October to make vigorous protest against the state tax to be assessed against doctors, commencing in 1949.

Revision of the by-laws, applicable to admission of new members came up the second time and the resolution prepared by the board of censors to admit hereafter only graduates of Class A schools was read. Final action is to be taken at the next meeting in Norton on November 10th. Topic for discussion at that time will be "Conduct of Labor and Treatment of Eclampsia".

Dr. C. H. Henderson and Dr. Thomas J. Tudor, both of Norton, are president and secretary, respectively of this Society.

Augusta County Medical Association.

At the regular meeting of the Association on August the 17th, the following were elected as officers for the ensuing year: President, Dr. Charles L. Savage, Waynesboro; vice-presidents, Drs. Irvin M. Nuckols and Richard P. Bell, Jr., Staunton, and Dr. Samuel G. Saunders of Waynesboro; secretary, Dr. Charles F. Gaylord, Staunton; treasurer, Dr. Boyd H. Payne also of Staunton; censor, Dr. H. G. Middlekauff of Weyers Cave.

The Tazewell County Medical Society

Met at the Tazewell County Country Club on August 19. This was a joint meeting with the Mercer County Medical Society of West Virginia and about fifty physicians were present. A dinner was served and Dr. M. P. Rucker of Richmond addressed the Society on Uterine Contraction Rings. Dr. H. A. Porter of Boissevain presided at the meeting. Dr. W. R. Strader of Richlands is secretary.

The Lynchburg Academy of Medicine

Held its regular monthly meeting at Lynchburg General Hospital September 13th at 8 P. M. Dr. Warwick Thomas of the Thomas Allergy Clinic, Richmond, spoke, using as his subject "Skin Manifestations of Allergy".

Dr. Howe Reese Coleman was elected to full membership in the Academy.

Dr. H. L. Riley, Jr., is president and John T. T. Hundley, Secretary.

Instead of the regular meeting in June, a Ladies' Night was held at Boonsboro Country Club, with the wives of the members present as guests. The dinner and social activities were thoroughly enjoyed by those present.

NEWS

Richmond Meeting, Medical Society of Virginia.

Programs for the meeting should be in hands of all members by this time and it will be seen that an interesting array of exhibits will be on hand and that there are papers on a large variety of subjects.

Members of the House of Delegates are reminded that the first session of this body is to be at 8:00 p.m. on Sunday evening, October the 17, and are asked to make their plans accordingly.

An outstanding feature will be honoring members of the Society who have been in the practice of medicine for fifty years or more. This exercise will be on Monday evening. A cocktail party, banquet, entertainment and dancing will be on Tuesday evening. On Tuesday, luncheon meetings will be held by so many organizations that every member, if interested, may arrange to be with some special group.

The Local Committee, under the chairmanship of Dr. Charles L. Outland, has been untiring in its efforts for the success of the meeting. Let's make this a banner meeting for our President, Dr. Guy R. Fisher, and the local doctors by having a large attendance!

General Practitioners To Have Luncheon At State Meeting.

Plans are now complete for a rousing good meeting of the newest organization in our State Medical Society, the State Society of General Practitioners. On Tuesday, October 19, during the State Society meeting, the general practitioners will hold a business meeting and luncheon combined in the John Marshall Hotel.

It is of interest to note that, since its organization at the last State Society meeting in Roanoke, membership in the General Practitioners Society has grown rapidly. In addition to individual general practitioners joining the State Society there have been a number of large groups to organize in local communities. The latest of these to organize was the Richmond group which met on September 14 at the Richmond Academy of Medicine. It is expected that close to all of the 172 general practitioners in Richmond will ally themselves with this local organization.

This meeting will be called to order by Dr. W. L. Powell of Roanoke, immediate past president of the Medical Society of Virginia and the first president of the State Society of General Practitioners. Dr. James Hamner, president-elect from Mannboro, is expected to take over the presidency following this meeting.

Membership is not a prerequisite to attendance. All general practitioners are invited. It is urged that you communicate with Dr. Edward Haddock, chairman of the luncheon committee, 1133 W. Franklin Street, Richmond, and ask that a plate be reserved for you.

A. M. A. Interim Session.

Registrations and hotel reservations are now being accepted for the second annual Interim Meeting of the American Medical Association at St. Louis, November 30 to noon, December 3, 1948.

On the eve of the Interim Meeting, Saturday, November 27, the first national Medical Public Relations Conference will be held under sponsorship of the A. M. A. at the Statler Hotel.

Planned to be especially valuable to the general practitioner, the Interim Session will offer lecture meetings, conducted by medical leaders on conditions most often seen in daily practice. Subjects to be discussed include diabetes, heart disease, cancer, poliomyelitis, obstetrics, pediatrics, dermatology, genitourinary conditions, hypertension, anesthesia, tuberculosis, jaundice, laboratory diagnosis, x-ray diagnosis, and physical medicine as applied to the treatment of arthritis.

Diagnosis and treatment will be stressed in a wide variety of clinical conferences, which will be correlated with the lecture meetings. Leading practitioners from all sections of the nation will conduct these conferences.

Evening programs will feature distinguished speakers, the award of the general practitioner medal, and fun. Entertainment will be provided, free of charge to physicians and their guests of course, by stars of the amusement world.

A scientific exhibit with nearly 100 displays will show clinical and pathological material on subjects dealt with in the clinical conferences. Approximately 115 leading firms will display technical exhibits, which will include new products, equipment, and medical publications.

A registration form which enables the physician to save time by securing a registration card in advance is appearing in *The Journal of the American Medical Association* every other week until the Interim Meeting. All reservations must be cleared through the Chairman, Subcommittee on Hotels, American Medical Association, Hotel Reservation Bureau, 1420 Syndicate Trust Building, St. Louis 1, Mo., and must be received before November 9, 1948.

Southern Medical Association.

To those interested in a southern vacation, all necessary should be to know that dates of the Southern Medical Association meeting are October 25-28

at Dinner Key, a bit of land extending from Miami, Florida, into Biscayne Bay—a navy air base during World War II. The scientific, technical and hobby exhibits will be at the same location.

Requests for hotel accommodations should be made to Hotel Committee, Southern Medical Association Meeting, care City of Miami Convention Bureau, 320 N. E. Fifth Street, Miami 32, Florida.

Dr. DeWitt C. Daughtry,

Class of '39, Medical College of Virginia, has resigned as chief of Thoracic Surgery at McGuire VA Hospital, Richmond, and has entered the private practice of thoracic surgery in Miami, Florida, with offices at 2300 Biscayne Boulevard.

Dr. Gordon D. Carmichael,

Who has been on the staff of the Allcghany Memorial Hospital since shortly after his release from Service in 1946, has located in Roanoke, with offices at 820 South Jefferson Street, for the practice of general surgery.

Dr. Robert Trice,

Class of '44, Medical College of Virginia, spent August in Boston, attending Dr. Sam Levine's course in cardiology. He is a son of Dr. and Mrs. E. T. Trice of Richmond.

Dr. Charles H. Bondurant,

Recently of Riverton and Front Royal, is now at Newton Baker Veterans' Administration Centre, Martinsburg, West Virginia.

A. M. A. Again To Honor Outstanding General Practitioner.

The American Medical Association has adopted the practice of honoring one outstanding general practitioner each year, and this year's award will be made at the St. Louis interim session, November 30 to December 3.

That a name may be submitted from Virginia, each component society is urged to name the candidate of its choice within its jurisdiction and submit the name to the Medical Society of Virginia for approval, either before or at time of its annual meeting, as the name has to reach A. M. A. headquarters prior to November 15.

American Academy of General Practitioners Honors Virginia Member.

Dr. John O. Boyd, Jr., of Roanoke was recently elected to the board of directors of the Academy at the first annual meeting of the Congress of Delegates in Chicago. Dr. Boyd was a logical choice inasmuch as he has been highly informed and deeply interested in the general practitioners' organization since its inception at the Atlantic City American Medical Association meeting in 1947. He is engaged in general practice in Roanoke and has been actively engaged in the work of the state organization, which he is now serving as secretary.

Delegates attending this meeting from Virginia were Dr. Clarence P. Jones, Jr., of Newport News and Dr. John O. Boyd, Jr., of Roanoke. Dr. James Hamner, president-elect of the Virginia Academy of General Practitioners, also attended the meetings and was active in the deliberations of the American Academy of General Practitioners.

The South Atlantic Association of Obstetricians and Gynecologists

Announces the establishment of "The Foundation Prize". Authors of papers on Obstetrical or Gynecological subjects, desiring to compete for the prize, may obtain information from Dr. E. D. Colvin, Secretary-Treasurer, 1259 Clifton Road, N. E., Atlanta, Ga.

Virginia Beach Hospital,

Which has been admitting patients for several weeks, will have its official opening about the first of October. This is a three-story structure of concrete and steel and contains the most modern equipment obtainable. It is privately owned by Drs. James W. Todd, Floyd H. Dormire and Waller L. Taylor. While a closed staff, it has the following consultants from Norfolk, covering various specialties: Dr. C. J. Devine, urology; Dr. A. D. Morgan, ear, nose and throat; Dr. W. Wickham Taylor, ophthalmology; Dr. J. L. Thomson, neurological surgery; Drs. G. A. Duncan and G. G. Hollins, orthopedics; Dr. John O. Rydeen, pediatrics; Dr. C. C. Smith, surgery; Dr. Lemuel Mayo, thoracic surgery; Dr. Walter B. Martin and associates, medicine; Dr. James W. Anderson, dermatology; Dr. A. A. Burke, bronchoscopy; Dr. Thomas N. Spessard, psychiatry; and Dr. Millard B. Savage, obstetrics and gynecology.

Duke's Symposium on Therapy.

Each year, Duke University holds an annual symposium which presents speakers of national prominence. This year's program is entitled "Sym-

posium on Therapy", and the speakers selected are outstanding specialists. Dates are November 4, 5 and 6.

On the social side, dinner will be served at Hope Valley Country Club between the afternoon and evening sessions on the 4th, and there will be a barbecue supper on the second evening. The football game between Duke and Wake Forest will come just at the close of the Symposium on Saturday.

Further information may be obtained from Dr. Edward S. Orgain, Chairman, Symposium Committee, Duke University School of Medicine, Durham, N. C.

Medical College of Virginia News.

Dr. W. Lawrence Weaver, Associate Professor in Industrial Medicine at the Medical College of Virginia (Richmond) and Medical Supervisor in the Rayon Division of DuPont Company, was recently elected a fellow in the American Academy of Occupational Medicine. Dr. Weaver is a graduate of Randolph-Macon College and the Medical College of Virginia (Richmond). Dr. Weaver has been active in research in the field of Industrial and related medicine, and written several articles for leading magazines. He joined the faculty of the Medical College of Virginia as an instructor in Industrial Medicine in 1940.

Postgraduate Course In Ophthalmology and Otolaryngology.

The annual Post-graduate Course in Ophthalmology and Otolaryngology will be held at the University of Virginia Medical School, Charlottesville, November 30th and December 1st for Ear, Nose, and Throat, and December 2nd and 3rd for the Eye.

The following speakers will participate in the program.

OTOLARYNGOLOGY

Dr. LeRoy A. Schall, Boston, Mass., will give talks on (1) Carcinoma of the Nose and Sinuses, and (2) Cancer of the Larynx.

Dr. Gilbert E. Fisher, Birmingham, Ala.: (1) Management of Esophageal Obstruction, and (2) The Recognition and Radium Treatment of Nasopharyngeal Lymphoid Tissue in the Prevention of Conductive Deafness.

Dr. Russell A. Sage, Indianapolis, Ind.: Oral Lesions.

Dr. J. Brown Farrior, Tampa, Fla.: Surgery of the Temporal Bone.

Dr. Stacy R. Guild, Baltimore, Md.: Hearing Tests.

Dr. Samuel Fomon, New York, N. Y.: Rhinoplasty.

Dr. Chalmers L. Gemmill, Charlottesville, Va.: Newer Drugs of Interest to the Otolaryngologist.

OPHTHALMOLOGY

Dr. Arthur J. Bedell, Albany, N. Y.: Fundus Changes in Constitutional Diseases. A Kodachrome demonstration presenting various changes which are either common or unusual in diabetes, nephritis, tuberculosis, syphilis, hypertension, the blood states, circulatory disturbances.

Dr. Alan C. Woods, Baltimore, Md.: The Ocular Changes in Primary Toxic Goitre and a Classification of the Optic Neuropathics.

Dr. Shaler A. Richardson, Jacksonville, Fla.: (1) Office Management, and (2) Malignancies of the Iris.

Dr. R. Townley Paton, New York, N. Y.: Keratoplasty—Indications and Selection of Cases and Results, Post-Operative Complications and How to Deal with Them; and (2) Retinal Detachment, Diagnosis and Operative Treatment.

Dr. William C. Owens, Baltimore, Md.: Motor Anomalies, Analysis and Treatment of the Cases; and (2) Cataract Surgery.

The fee for the course is $25.00 for the four days and $15.00 for either part thereof.

Accommodations may be secured at the Monticello Hotel or the Albemarle Hotel, in Charlottesville. For further details, write Dr. Fletcher D. Woodward, P. O. Box 98, Charlottesville.

Dr. Horace A. Albertson,

Class of '43, Medical College of Virginia, who has had a residency in surgery at Jefferson Hospital, Roanoke, since his release from Service, completed this on June 30, and is now at the Veterans' Administration Hospital at Newington, Conn., as resident in surgery.

Dr. Warren F. Draper,

Former State Health Commissioner of Virginia on loan from the U. S. Public Health Service, was appointed as executive officer of the medical and hospitalization service of the United Mine Workers, effective September 1.

Wanted

Physician for industrial practice. For particulars, write Medical Director, Clinchfield Coal Corporation, Dante, Virginia. (*Adv.*)

Wanted:

Assistant to doctor in small industrial town in southwest Virginia. Contract and private practice. Will pay salary and commission, with prospect of taking over entire practice in future. Address "Practice", care this journal, 1200 East Clay Street, Richmond 19. (*Adv.*)

XUM

OBITUARIES

Dr. James King Hall,

Nationally known Richmond psychiatrist, died September 10th, having been in bad health for some time. He was a native of Iredell County, North Carolina, and seventy-three years of age. Dr. Hall graduated from Jefferson Medical College in 1904. After serving as a member of the staff of the State Hospital at Morganton, North Carolina, in 1911 he participated in the organization of the Westbrook Sanatorium at Richmond of which he was president and head of the department for men. Dr. Hall had served as president of the National Association of Private Psychiatric Hospitals, the Southern Psychiatric Association, the American Psychiatric Association, the Tri-State Medical Association of the Carolinas and Virginia, and the Richmond Academy of Medicine. He was also a member of several other medical organizations and was at one time Chairman of the Governor's Advisory Board on Mental Hygiene. He was an associate editor of *Southern Medicine and Surgery* and of "Diseases of the Nervous System" and from time to time contributed to medical literature. Dr. Hall had been an active member of the Medical Society of Virginia for thirty-seven years and a former vice-president. His wife and three sons survive him.

Dr. Israel Kay Redd,

Prominent physician of Ellerson, died August 21st. He was a native of Hanover County and fifty-five years of age. Dr. Redd graduated from the Medical College of Virginia in 1914 and had practiced in Ellerson for thirty-two years. He was a student of the Civil War and was an authority on the battlefields near Richmond, it being said he knew the location of every entrenchment and the part it played in the conflict. Dr. Redd was a member of the Medical Society of Virginia for a number of years. His wife and three children survive him.

Dr. Joseph Bear,

Well-known obstetrician of Richmond, died unexpectedly of a heart attack on August 28th. He was in his office and had just completed treatment of a patient. He was fifty-nine years of age and a graduate of the Medical College of Virginia in 1912. Dr. Bear had practiced in Richmond since his graduation and was at the time of his death president of the Richmond Obstetrical and Gynecological Society. He was on the teaching staff of the Medical College of Virginia. Dr. Bear had been a member of the Medical Society of Virginia for thirty-five years. His wife and a daughter survive him.

Dr. Oliver Curry Brunk,

Well-known physician of Richmond, died August 19th after a long illness. He was born in Harrisonburg in 1878 and graduated in medicine from the University of Virginia in 1903. Dr. Brunk had practiced in Richmond since 1912 and since 1935 had been surgeon of the city's Police Department. He was a Mason and a Shriner and had been a member of the Medical Society of Virginia for forty-five years. His wife and a daughter survive him.

Resolutions On Dr. Julian M. Robinson.

By appointment of Dr. L. R. Broome, President of the General Staff of Memorial Hospital, Danville, Virginia, this Committee, acting for the General Staff presents the following resolutions:

1. It is with profound sorrow that the General Staff has learned of the death of Dr. Julian M. Robinson, which occurred on June 28, 1948. We wish to extend to his family our deepest sympathy. He will not only be a great loss to his family but also to the medical profession of this and surrounding communities, and to the numerous and genuine friends he has made through an active, devoted and fruitful career as physician, counselor, friend and civic spirited citizen.

2. IT IS RESOLVED that a copy of this be entered upon the minutes of the General Staff of the Memorial Hospital, and that copies be sent to the VIRGINIA MEDICAL MONTHLY, the American College of Surgeons, the Southern Surgical Association, and the family.

L. O. CRUMPLER
JOHN T. DAVIS
SAMUEL NEWMAN
Committee